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edited by HARL R. DOUGLASS, Ph.D.,
DIRECTOR OF THE COLLEGE OF EDUCATION,
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TEACHING IN HIGH SCHOOL

By

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8

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PREFACE

The purpose of this book is to orient the high school teacher with respect to his task in the world of today—his responsibilities toward the pupils he teaches, the objectives of his teaching, his functions in and outside the school, and his own personal welfare. The chief emphasis is upon the effective application of sound teaching principles in attaining the objectives of secondary education.

The directing of learning in its various aspects is the principal topic and receives the major share of attention. Other functions of the classroom teacher are treated also—leadership in extracurricular activities, participation in curriculum construction, measurement and evaluation of students' progress, counseling and guidance, the use of research materials, and the utilization of community resources in teaching. Since neither the subject matter nor the methods of instruction can be logically considered except in relation to the purposes of secondary education and the basic principles of learning, the authors have set forth their views on these matters in the first few chapters. Recognizing also that teachers are people, they have concluded the book with a discussion of the practical problems of getting a teaching position, establishing professional relationships, using the means of in-service growth, maintaining mental health, and observing professional ethics.

The authors have attempted to bring together in this volume the best modern theory and practice. The book is based upon the consensus of research findings, reports of successful teaching experience, and accepted psychological principles of education. Extensive reference has been made to the contemporary views of educators and psychologists as expressed in current books and professional journals. The practices and expert opinion of leaders of educational thought in parochial and other non-public schools also have been utilized. Much of the material of the book grows out of the authors' practical experience. Both have been high school teachers for a number of years, supervisors of many hundreds of student teachers, and instructors in methods, supervision, curriculum making, guidance, and general secondary education. Some of the views and findings of professional colleagues and former students which the authors have tested and found good are included in the authors' words. Such minor inconsistencies as appear may be explained as differences in conclusions drawn by different investigators from similar research and experience.

Development of the high school student as a whole, on all fronts, has been kept in mind constantly as the true objective of secondary education. The authors believe that no one specialized school of educational thought has fully achieved this goal, though many have contributed to progress toward it. Hence they do not accept as a fixed point of view any one of the modern teaching concepts such as the stimulus-response psychology, or the *Gestalt* theory. The book considers subject matter as a means to pupil growth, nothing more; it is society-conscious; cognizant of the present it looks to the future, not to the past; and it tends toward unitary synthesis, not fragmentation.

In the interest of providing a text appropriate for the times, the authors of this volume have diverged from previous ways of treating the work of the high school teacher, as did both Morrison and Douglass, writing on the same subject in the late 1920's. It is hoped that this book, like those of two decades ago, will inaugurate a new type of course in high school teaching for classes of prospective teachers. The authors have kept in mind throughout the book its probable usefulness to experienced teachers who wish to continue their professional in-service growth.

HARL R. DOUGLASS
H. H. MILLS

February 3, 1948

CONTENTS

CHAPTER PAGE

1 THE OPPORTUNITIES AND RESPONSIBILITIES OF THE TEACHER 3

✓ 2 THE HIGH SCHOOL STUDENT OF TODAY 21

3 THE NATURE AND OBJECTIVES OF INSTRUCTION . . . 38

✓ 4 BASIC PRINCIPLES OF LEARNING, TEACHING, AND MOTIVATION 58

5 TEACHING FOR DIFFERENT TYPES OF LEARNING OUTCOMES 80

✓ 6 DISCIPLINE AND HIGH SCHOOL TEACHING 99

✓ 7 PLANNING FOR TEACHING 120

8 DIRECTING THE STUDY OF HIGH SCHOOL PUPILS . . 139

✓ 9 TEACHING PUPILS HOW TO STUDY 158

✓ 10 SOCIALIZED CLASS PROCEDURES 180

✓ 11 TEACHING UNITS OF LEARNING 199

✓ 12 LECTURING, TELLING, AND EXPLAINING 228

13 DRILL, PRACTICE, AND REVIEW PROCEDURES . . 243

✓ 14 USING QUESTIONS AND PROBLEMS IN TEACHING . . 259

✓ 15 SELECTING AND ORGANIZING LEARNING MATERIALS . . 279

✓ 16 VISUAL AIDS TO TEACHING 305

✓ 17 AUDIO AIDS TO TEACHING 332

18 UTILIZING COMMUNITY RESOURCES IN TEACHING . . 353

✓ 19 ADAPTING INSTRUCTION TO THE INDIVIDUAL . . . 380

✓ 20 MEASURING, EVALUATING, AND REPORTING PUPIL PROGRESS 411

21 MEASURING, EVALUATING, AND REPORTING PUPIL PROGRESS (CONTINUED) 436

22 THE TEACHER AND GUIDANCE 466

23 SPECIAL EDUCATIONAL PROBLEMS 487

24 SPECIAL EDUCATIONAL PROBLEMS (CONTINUED) . . 504

CHAPTER PAGE
25 THE TEACHER'S PROFESSIONAL AND BUSINESS PROBLEMS 522
26 IN-SERVICE EDUCATION OF TEACHERS 541
27 THE TEACHER AS A PERSON 568

SELECTED REFERENCES 591
INDEX 617

TEACHING IN HIGH SCHOOL

Chapter 1

THE OPPORTUNITIES AND RESPONSIBILITIES OF THE TEACHER

1. Modern v. Earlier Teaching

Teaching of a Higher Order.—Teaching in the up-to-date school of today is a vastly more complex and professional undertaking than teaching in the schools of previous generations, and it is constantly becoming more so. In reading detailed descriptions of school activities in the early days of this country, or even at the turn of the century, one is impressed by the simple, even primitive, nature of the teaching that prevailed, the now thoroughly discredited basic philosophy, and the narrow scope and modest goals of education as it was then conceived. As compared to the activities, basic philosophy, and life-wide scope and aims of education in our schools today, the theory and practice of those days would seem incredible were it not for the fact that even now these outmoded ideas and practices still exist in a substantial minority of schools.

The Passing of an Old Order.—In earlier generations, the temporary ability to recite schoolbook facts, understood partially or not at all and unrelated to the problems and needs of either young people or adults, and the acquisition of the more elementary skills in the three R's, Latin, algebra, and geometry constituted the greater part of the aims and activities of education as then conceived. Teachers were teachers in name only. They were in fact recitation conductors. They assigned lessons, motivated study by warnings of failure and other punishments, heard recitations, and gave grades, attempting to keep order among young people to whom by nature such procedures and such a regime were repellent.

Memoriter drill was the prevailing mode of learning. Form had become so completely substituted for value that little attention was given to understanding; to reproduce the text, that was the thing. The pupil sat in his seat and read over and over to himself the magic lines. If he could reproduce the material without serious fault when the time for the annual, quarterly, or semi-annual examination arrived, his proud but dignified drillmaster, his fond and ignorant parent, and the boy, beside himself with relief from fear of failure and punishment, rejoiced together at the success of this formality.

To "impart" knowledge had been the traditional role of the teacher. Prior to the present century, imparting knowledge was considered his main function if not his only one. Definite formal procedures were utilized in an effort to make certain that all pupils acquired a mastery of subject matter. The lecture or telling method and the Socratic or questioning method, with considerable emphasis upon drill and upon textbook material, were used to the exclusion of almost all other procedures. Little or no consideration was given to concomitant learnings or to the present or future uses the pupil could make of the knowledge he was acquiring. The acquisition of knowledge was considered largely an end in itself. The greater the difficulties encountered by pupils in acquiring the knowledge, the greater its educational value. If the knowledge being acquired was of little practical value, it did not matter. The very process of acquiring "knowledge" was endowed with mystic properties, and reason bowed to authority. There was no appeal from the statement that it "trained the mind."

Assisting young people to acquire information remains an important part of the teacher's work, although it occupies a much lower niche in the scale of educational values prevailing today. The modern school recognizes the necessity of acquiring knowledge not for its own sake but as a means toward an end. Only that knowledge which results in desirable changes in the thinking and activities of people is considered significant. The concept in regard to the most effective method of acquiring knowledge also has changed. The teacher in the modern school recognizes the necessity of self-activity on the part of the learner.

Recognition is finally being given to concomitant learning, with its possibilities for developing proper attitudes, appreciations, and understanding, and to the dangers of developing in school children passivity, strong aversions for everything pertaining to school, and unsocial or antisocial attitudes. If the teacher, in his efforts to assist pupils to acquire facts in history which appear significant to him, uses methods which cause them to form a dislike for the subject, he has defeated the main purpose of instruction—that of developing an abiding interest in the significant developments of human activity. The truth of this statement is even more clearly discernible in the field of literature, where the most desirable result is an appreciation which causes pupils to "follow through" in later life by reading good literature.

The teacher of today also recognizes that teaching materials which are closely related to the immediate needs and interests of children have the best chance of being utilized by them, confronted as they are by an ever-increasing number of personal, economic, and social problems. The utilization of such materials not only makes the learning situation more meaningful to the learner, but offers greater assurance of actual use value. Learning itself has taken on a new meaning with the recognition that only when the child participates in a purposeful, meaningful manner does he actually learn. This concept is in sharp contrast to the role of the teacher as stated by Comenius in the seventeenth century:

> He [the teacher] must stand on an elevated platform, and keeping all the scholars in his sight at once, allow none of them to do anything but attend and look at him. He must imbue them with the notion that the mouth of the teacher is a spring from which streams of knowledge issue and flow over them, and that whenever they see the spring open, they should place their attention like a cistern beneath it, and thus allow nothing that flows forth to escape.

The memorization of information came to share the prodigal and lavish attention once given to the development of linguistic skills. Learned definitions couched in impressive vocabulary and elaborate scientific classifications far beyond the needs, interests, and capacities of the pupils, along with historical details, absorbed the energies of teacher and pupil.

The use of fear, humiliation, and physical punishment persisted as a very important incentive to application, but in gradually diminishing degree, until by the beginning of the nineteenth century corporal punishment was used with few exceptions only for infractions of authority and discipline, and sarcasm and humiliation for inferior achievement were beginning to be employed less frequently by the more temperate and better-poised teachers. Emulation and rivalry became the more usual stimulants to learning, though a small minority objected, largely on the ground of effect on social attitudes.

Instruction was constantly aimed at "filling the mind." Little effort was made to influence conduct more directly except as a "well-filled" and well-disciplined mind might conceivably govern behavior. Considerable incidental effort was expended in attempts to instill certain virtues, principally ethical attitudes and ideals which reinforced the prevailing philosophy of instruction—industry, persistence, patience, pride in thoroughness, and the like. Little attention was given to the generalization of these ideals in all phases of life.

Oral quizzing made less important the giving of frequent written examinations and rendered less necessary the use of daily written homework. Teaching loads of six or seven classes a day precluded the expenditure of much time upon written work. Written examinations were, however, employed quite universally, generally as periodic or final examinations over large units of subject matter. As was the case with the teacher's preparation for instruction, little time was spent in preparing examinations or in trying to improve them. That was to be a contribution of the succeeding century. The general outline of instructional procedure consisted of class recitation and assigned work, amounting to little more than oral and written testing, and usually concluded with a hasty measuring of the dose for the morrow.

When critic after critic pointed out the futility and wastefulness of the prevailing procedures, the temporary nature of memorized "learning," and the lack of value for life situations and problems in such learning, exaggerated claims for "transfer of training" were made. Extravagant assertions were made regarding the degree and amount of development of such general powers and habits as "stick-to-it-iveness," observation, memory, and industry and the transfer of powers and habits developed with schoolbook material to all phases and types of life activities—a myth that still is invoked to rationalize ineffective teaching by teachers lacking in professional skill, industry, and ingenuity.

Little provision was made for the unique character and characteristics of the individual learner. A mythical standard child was envisaged. If the actual youngster was not interested or if he was slow to learn, it was because of his perversity and laziness, which must be cured by drastic means. In the high school the child of average ability or less, and the one more interested in vital things than in "learning off" relatively meaningless words, did not suffer long. They were soon eliminated from school. In this group were many men who later by self-education became leaders in business and industry, even scientists, and scholars.

The Passing of the Old Order.—The twentieth century has witnessed a many-sided and withering attack upon the old standard daily recitation, lesson-hearing concept of teaching. Unsuspected by the great mass of teachers who hail them as recent contributions, most current developments are directly traceable to thinkers at least as ancient as Plato, but more directly to Comenius, Rousseau, Pestalozzi, Herbart, and their contemporaries and disciples.

Chiefly under fire were the following aspects of nineteenth century educational tradition:

1. Failure to appreciate the importance of directing and making effective the out-of-class learning activities of the pupils
2. The wastefulness of daily lesson-hearing class recitation
3. Inadequacy of the standard class method as a means of adapting instruction to the differing abilities, interests, and needs of pupils
4. Unsocial training resulting from the individualistic pupil-pupil and pupil-teacher relationships, and the relative lack of group cooperative activity in the recitation system
5. Failure to correlate instruction around centers of application and interest in a lifelike manner, as in problems and projects
6. The daily "spoon-feeding" assignment, which did not adequately provide for pupil initiative and for the unification and correlation of various *daily sections of the subject matter*
7. Indefiniteness of the conventional assignment and inadequate preparation given pupils for effective study
8. The teacher's inability to measure the pupil's progress accurately and objectively
9. The tendency to focus attention upon words rather than upon ideas and meanings
10. Failure of teachers to supplement dry textual outlines with class instruction and related reading
11. Irrational overemphasis upon multitudinous petty facts, too numerous to learn and for the most part quickly forgotten
12. The untoward effects of harsh, tyrannical, fear-inspiring class methods upon mental balance and the development of personality

2. RECENT DEVELOPMENTS

The New Teaching.—Constructive outgrowths of dissatisfaction with the old order have appeared in profusion in recent years. The supervised study movement, which began about 1910, has spread in various forms throughout the country, particularly since 1915. Under the supervised study plan much less time is given to recitation and much more attention to directing the study efforts of the pupils. At first this plan involved a double period of ninety minutes and the recite-study sequence. It now usually employs a lengthened fifty-five to sixty-minute period, divided in a flexible manner, and various forms of large unit assignments or "contracts."

The strictly individual relationship of teacher to pupil has given way to various types of more social procedures, several of which were once stigmatized by the term *socialized recitation*. Recently the more dramatic types involving student chairmen have come to be used only as occasional devices. Various forms of group discussion and cooperative study and work on projects have, however, spread steadily in daily practice.

Developments in the field of educational psychology such as the invention of mental tests and formulation of the concepts of mental age and the I.Q. have given tremendous impetus to the provision of better means of dealing with individual differences. Efforts to meet this need have given us scores of devices and plans. Within recent years the emphasis has shifted from efforts to meet this need by various administrative plans such as grouping of students according to ability, to more functional instructional methods—indeterminate or differentiated assignments, special assignments, and supervised study. Study periods under the supervised study plan provide opportunities to give assistance according to the needs of individuals and to suggest additional activities to those of unusual abilities or interests.

The use of visual and auditory aids and other tangible objects has developed beyond the dreams of the teacher of the nineteenth century. In addition to a more widespread use of simple aids such as pictures, maps, slides, natural and manufactured objects illustrating lesson topics, laboratory apparatus, and models, many though not all schools are today employing sound "movies" and radio programs. The revolt from verbalism, breaking forth sporadically since Comenius, has in the twentieth century really overturned the oppressors of understanding, and teachers in numbers almost large enough to constitute a majority are really addressing themselves seriously to the task of instruction as opposed to lesson-hearing.

The dreams of Pestalozzi and Herbart and the insistence of John Dewey regarding social and character education through the schools now seem nearer to effective application than ever before, though they are far from universal or complete application. Nevertheless, the increasing tendency to interpret education as a means of inculcating social virtues is encouraging. The receding influence of college preparatory and disciplinary objectives upon training in subject-matter and skills has made possible at least a faint appreciation of the great importance in education of ideals, attitudes, interests, tastes, and social habits. These are matters no less of method than of materials. The increasing waste from crime, political dishonesty, and practices which restrict production and the purchasing power of the masses have brought us face to face with the needs for this new kind of training. It is difficult to see how school people can fail to realize its significance.

Developments in the Last Few Decades.—Since 1910, great strides have been made in improved methods of measuring the results of learning. Not only do teachers generally employ today more objective and more reliable means of measurement, but especially in recent years much more attention has been given to measuring advancement in fields other than general information and subject matter. The superior teacher today understands how to measure growth in attitudes, ideals, interests, and understanding.

Closely related to the improvement of testing is the increased use of controlled experimentation as a means of evaluating techniques. This scientific approach to the problem of judging the merits of proposed procedures has not been as fruitful of definite conclusions as was hoped. Yet it has thrown much light upon the relative efficacy of various plans in contributing to such educational outcomes as can be measured—chiefly information and subject-matter skills. It constitutes a most promising improvement over the prevailing armchair and forensic approach and has already served to bring into serious question the somewhat extravagant claims of the proponents of various new teaching plans or techniques.

All of the newer trends in teaching which characterize the twentieth century revolution emphasize initiative and responsibility on the pupil's part, the importance of experiencing success rather than failure as a fundamental of mental hygiene, and the healthful development of personality. They respect the self-confidence and intellectual and emotional integrity of the individual. They are also radical realism. "Learning by doing," "all learning through sense impressions," "understanding before memorizing," and many other such expressions, voiced in previous centuries by the forerunners of the revolt, have become principles of practice as well as of theory today.

Through all the more recent developments in method, one may easily discern the trend toward more friendly, cooperative, sympathetic pupil-teacher relationships. Even in spite of the accretion of millions of pupils from the lower levels of economic status and intellectual ability, discipline has become less and less a crucial problem, a convincing testimonial to the new relationship between instructor and instructed.

The twentieth century has also witnessed a multitude of developments which in their application and misapplication partook of the nature of fads, such as the "challenge" and "contract" assignments and the "mastery" plan. Of these many "plans" and "methods," not one bids fair to survive intact. Each has its weaknesses and points of overemphasis and lack of balance. Attempts to interpret all needs and trends and bring them to teachers in the form of "recipes," "formulas," or "steps" are after enjoying a period of popular acclaim becoming absorbed and assimilated in the great mass of teaching practice. From this mass will evolve fundamental principles, as well as devices and techniques to be mastered by teachers and incorporated in their kit of tools for selection and combination in all manner of procedures, thought through and planned to fit the immediate situation. In considering what devices and techniques to employ, the teacher must consider the type of educational outcome chiefly desired, the nature of the instructional materials at hand, the interests, needs, and abilities of the particular pupils, the relative skill of the teacher in the use of the various techniques, and other such variables as go to make up the particular situation to which a teaching procedure is to be applied.

The great advances in secondary school method may be largely accounted for by increased attention to psychology and method as essentials in the training of secondary school teachers. The establishment of departments of education in colleges and universities, formal requirements of minimum professional training, the development of numerous and increasingly better books on methods, the growth of groups, clubs, and organizations—local, regional, and national—for the study and exchange of ideas on general and special methods, and the development of special method journals—all these have speeded up the contributions to method and the spread of new ideas.

Directing Learning Activities.—The teacher's most important responsibility is to plan and direct the activities which will result in learning. In the modern school the teacher is considered a director of learning. This means that he must conceive and provide the goals, motivation, materials, activities, and measures of growth which will insure that the learners under his supervision will grow, acquiring information, concepts, habits, skills, ideals, interests, attitudes, and tastes that will cause them to be better and happier workers, parents, and persons.

The effective director of learning trains his students in the skills and habits of learning. He is a teacher of reading, of vocabulary building, of note-taking, and of other techniques of learning. He also assists in the formation of effective study habits.

Extra-Classroom Responsibilities and Opportunities.—The high school teacher of today has important responsibilities and opportunities in extra-classroom areas. He assists in the organization and management of clubs and other student organizations and activities. As teacher, homeroom sponsor, class adviser, and counselor he participates in guidance services of many kinds—educational, vocational, moral-civil-social, health, and leisure guidance. This greatly expanded field of service not only materially increases the importance of teachers in the lives of young people but also increases materially the necessity for professional study and growth and for improvement of the teacher's ability to work with and influence young people.

Still another important area in which the work of the teacher has expanded in recent years is that of public relations and community activities. The teacher of today is a salesman for public schools in general and his own school in particular. He must participate actively and intelligently in interpreting the program and needs of his school to the people of his community. He must seek and learn to capitalize effectively contacts with individuals, service clubs, and other organizations. He must also enter into his community as do other professional people with the purpose of expanding his personal acquaintance and discharging his responsibilities as one of the better educated citizens for community service and leadership.

In the following paragraphs several types of such opportunities and responsibilities will be discussed briefly. It may readily be seen that the teacher of today has the burden and the privilege of a much richer, a more practical, and a more difficult, complex, and technical professional service to youth and to society than his predecessors had.

Counseling.—The superior teacher of today realizes that the maximum contribution to the growth of young people involves assisting them with various problems—problems of health, of social life, of educational planning, of sex, of religion, of home relations, of choosing a vocation, of money, and of leisure and social life.

The opportunities for valuable service as a counselor are so great as to constitute a thrilling challenge. The responsibilities are so great—the possibilities for harm as well as for good—that the truly superior and ethical teacher will make special preparation for them. The effective counselor must be a student of adolescents and their problems, of guidance programs and procedures, of measurement of human intelligence, aptitude, interests, temperament and disposition, and of all aspects of the individual with which a counselor is likely to be concerned.

The classroom teacher has a strategic opportunity and a responsibility for learning about individuals—their difficulties, peculiarities, home life, interests, habits of action, attitudes, and plans. These facts may be recorded and made available to others who may at the time or later be counselors to the individual.

Providing Suitable Conditions for the Development and Maintenance of a Sound Personality.—It is becoming more and more generally recognized that school life is of great importance in determining the present and future mental health and strength of personality of the child. It is not only that the school and the teacher may be responsible for damaging the personality of young learners; in the better schools, the growth of healthy, sound personality is one of the more important objectives for the attainment of which the whole program of educational materials and methods is adjusted.

In recent years much attention has been given to the fact that an increasing number of people, both youth and adults, apparently do not enjoy good mental health. It is also now believed that at least one cause of mental illness is the result of unfortunate experiences in school life. Many features of our school organization contribute to a feeling of inadequacy and inferiority on the part of large numbers of children. One example is the attempt to require a child to meet standards of achievement beyond his potentialities, or to participate in activities in which at the time he has no interest. A concomitant of this requirement is deprivation of opportunities for success in activities in which the child has a reasonable opportunity to succeed.

Burnham[1] suggests that "every child should get a gauge of his abilities by opportunities for marked success in some activities as well as failure in others." The teacher is responsible for arranging situations in which the child will participate without external compulsion and will have a reasonable chance of success. The teacher should also recognize that he has an obligation to maintain his own mental health.

Directing Student Clubs and Organizations.—The teacher in a secondary school today is almost always expected to assist in managing a student non-curricular enterprise—an annual, a club, a de bate squad or team, an athletic team, a band, or some other student organization. This type of educational responsibility is usually not only an interesting experience but a challenging one. It calls for skillful management and careful educational thinking. Because of its great potentiality for educational growth, the activity must be planned and managed so as to make the greatest possible contribution to its educational objectives—social adjustment, musical, forensic, journalistic, or other skills and knowledge, skills and habits of self-expression, and moral and ethical standards.

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[1] W. H. Burnham, *The Normal Mind*, p. 211.

Evaluating Pupil Growth and Diagnosing Difficulties.—The teacher has a great responsibility for careful evaluations of the achievement and progress of pupils in his classes. Good teaching proceeds on the basis of clear understanding of pupil progress on the part of the teacher. As the evaluations of pupil achievement by teachers are not only demanded by parents but are also used for purposes of guidance and by employers and the public in estimating the efficiency of prospective employees, it is incumbent upon the teacher to make the evaluations as accurate as is possible and to utilize means of reporting and recording the evaluations in a form meaningful to all concerned. No evaluation is defensible which does not utilize the best instruments of measurement that have been devised.

To measure pupil growth adequately calls for expertness in the construction of tests, rating devices, and examinations and in the interpretation of the results of the use of such instruments. The tests and examinations employed by teachers of a generation ago not only were relatively unreliable for whatever they measured, but they furnished little or no measure of growth other than the temporary acquisition of bookish information and of subject matter skills. The superior teacher of today has learned to evaluate growth in attitudes, understandings, ideals, mental and physical habits, emotional maturity, and interests.

The superior teacher also has become proficient in devising means for discovering the important weaknesses of learners and for providing remedial materials and methods.

Conducting and Utilizing Research.—The teacher's best chance of knowing what to do with children rests upon his efforts to improve his work constantly by utilizing the techniques of research. The research conducted by teachers, while it may be of a relatively simple nature, has the advantage of being conducted in actual teaching situations. Teachers also have the responsibility of utilizing the findings of careful research work conducted by investigators who have the necessary interest and ability. The superior teacher of today, like the superior physician and dentist, is not only diligent in keeping abreast of research pertaining to his field of work, but he has learned how to evaluate and interpret research critically.

3. Teaching for Democracy in a New World

As our country has developed it has become increasingly apparent that progress in a democracy can be made only as fast as the great mass of the people are ready for it—as they see the need for it, demand it, and try to bring it about. It has long been recognized by national leaders that the principal purpose of the public school is to educate for intelligent citizenship. Upon no other basis can we justify public support of schools by taxing those with no children in public schools or taxing according to wealth.

The following quotations are offered as indicative of the belief that education for intelligent citizenship is the principal purpose of free public schools:

> Promote them as an object of primary importance, institutions for the general diffusion of knowledge. In proportion as the structure of a government gives force to public opinion it is essential that public opinion should be enlightened.—George Washington.

> Youth must be inspired to purify and perfect our civilization and government.—Noah Webster.

> Democracy can succeed only as supported by enlightened opinion, and teachers must bring this about.—Samuel Knox.

> Above all things, I hope the education of the common people will be attended to; convinced that on this good sense we may rely with the most security for the preservation of a due degree of liberty. I do most anxiously wish to see education given to all degrees of our citizenry to enable them to understand what is going on in the world and to keep their part of it going on right.—Thomas Jefferson.

> A people who mean to be their own governors must arm themselves with the power which knowledge gives. Education is the true foundation of civil liberty, and on it therefore, rests the welfare and stability of the republic.—James Madison.

> The members of society in every district must possess that knowledge necessary to qualify them to discharge with credit and effect these great duties of citizens on which free government rests.—James Monroe.

Next in importance to freedom and justice is popular education, without which neither justice nor freedom can be permanently maintained.—JAMES A. GARFIELD.

The theory of the state in furnishing more and better schools is that it fits us to perform better our duties as citizens.—GROVER CLEVELAND.

Teaching for Economic Democracy.—If our founding fathers in their day of simple agrarian life had been able to foresee the complexity and seriousness of current economic and political problems, it is doubtful that they would have been the first to set up a form of government in which so much power rested in the hands of the voters. Today it is a question whether democracy, in the absence of far more effective education for citizenship, will or will not result in disastrous war, economic chaos and collapse, revolution, and some sort of fascism or communism.

Here indeed is a thrilling challenge to the red-blooded teacher who yearns to do things and is not content to teach "little things to little people." Here is a challenge that is greater than that inherent in selling people goods, prescribing medicine, drawing plans, attending sick people, or representing clients in quarrels or business transactions. The teacher of every subject at every level has an important responsibility. Upon what is done in the schools towards this objective depends the future happiness not only of the children taught but of all Americans and indeed all inhabitants of this planet. Not only is the importance of this responsibility greater than many teachers can realize and the study of such problems keenly interesting, but the teacher who keeps informed about national and world problems and works constantly towards the objectives of intelligent citizenship cannot help but sense the importance of what he is doing in a way impossible to the "schoolmarm" or "schoolmaster" who is no teacher at all.

As long as millions live in poverty, without electric lights, labor-saving machines, abundant nourishing food, comfortable clothing, medical and dental service, and the other blessings made possible for all by our scientific and technological progress, there is a flaming challenge to teachers. The lack of education on the part of the masses of voters stands between our present status and a standard of living for all comparable to that of those family units with an annual income of $3000 or more. If our total productive capacity continues to operate at its 1947 potential, our annual income should be approximately 200 billion dollars[2] or an average of more than

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[2] *Time*, Aug. 18, 1947: "The Department of Commerce last week reported that the nation's personal incomes rose in June to a record annual rate of $193 billion."

$5000 per family unit. Unless the standard of living possible can be achieved by adequate distribution of purchasing power, however, production will in the long run be at a fraction of its potentiality, total profits relatively small, full employment impossible, and democracy in a dangerous position.

Teaching for Other Phases of Democracy.—Other problems challenge the teacher who would be more than a schoolmarm. The problems of democracy for Negroes and other minority groups, of freeing government from the control and undue influence of individual and pressure groups working for selfish interests, of more honest and efficient government in cities, states, and the nation, of the conservation of natural resources, particularly our soil and our disappearing minerals, of greatly increased juvenile delinquency, of the disintegration of the family and home, of the provision of medical and dental service for all, and many other such problems will be solved only by a citizenry appropriately trained by teachers. The better teacher of today cannot be merely an academic person of the world of children and schoolbooks.

Teaching for World Peace and Understanding.—The very existence of humanity and civilization as we have known it on this planet depends upon the teacher. Development of the means of human destruction has been so rapidly accelerated that there are only two alternatives—world suicide or mutual understanding among the peoples of the world. Only teachers can bring about the right choice.

As Congresswoman Helen Gahagan Douglas has said, "There is no question but that the atomic bomb is here to stay. The only question is—Are we?" Not only may the great cities and centers of industry be destroyed in a few minutes by atomic bombs perhaps stored in advance, but warfare can now be carried on by the spread of bacterial diseases which would destroy millions of lives. The responsibility which the school must discharge in educating for understanding what warfare will mean in the future is great, and greater still is its responsibility for educating our citizens away from their traditional provincialism and their ignorance and conceit in facing other cultures than their own, lest we precipitate a war which we may not survive.

As the result of World Wars I and II and our technological and business development we have become the principal custodian of the world's peace and well-being. Upon the U. S. A. and the U. S. S. R. has been placed the great responsibility which once was borne by Great Britain, Germany, and France. The peoples of neither nation have been prepared to assume this responsibility. They are both still provincial, both inexperienced, at opposite poles in economic ideology, and possessed of an alarming degree of mutual suspicion and antagonism. The safety of the world depends upon our people and their education as never before. We have entered a new era—unprepared. In a democracy national policy must be in harmony with the will of the people—whether that will is founded on facts and sound education or upon propaganda and ignorance. The teacher of today holds the key to our future policy.

Teaching for Intellectual Emancipation.—Still another challenge confronts the teacher of today. We must assume a greater responsibility for education as the natural consequence of the deterioration of such educational agencies as the home, the church, and the means of communication. This is particularly true of the press and the radio. No longer is the popular press representative of the various interests of the country. Many newspapers present a biased point of view in regard to labor and management as well as in regard to consumers' problems. Sensational crime stories are frequently featured. These biases are reflected not only in editorials, but also in the headlines and news items. It is therefore essential that pupils be encouraged to read critically newspapers representing various points of view.

Increasingly in recent years radio commentators have given evidence of being highly susceptible to the influence of their sponsors and radio station owners. For this reason it is necessary to teach children to listen critically to commentators, analysts, and lecturers.

Even more pronounced, though to be expected, is the commercial propaganda in newspaper and radio advertising. The best musical, artistic, literary, and dramatic talent is purchased and brought to bear upon readers and listeners to create and expand demand, and to stimulate the purchase of inferior and overpriced articles. The school and the teacher have a challenging responsibility to furnish a sound basic education with attention in all subjects to the problem of freeing the consumer from the dangers inherent in commercial propaganda.

Because of the deterioration described, the necessity for education of a free and unbiased nature is increasingly great. If democracy is to succeed, future voters must be given a training sufficiently sound to enable them to interpret and evaluate a biased press and a partisan radio.

The Modern Concept of the Role of the Teacher.—The superior teacher of today is an important person. He is no longer an impractical schoolroom person insulated by children and schoolbooks from the world of practical affairs. Upon him rests the success or failure of the world's greatest political and economic experiment—democracy and free enterprise. Upon him and his work depend the peace and welfare of the world.

His responsibilities have broadened in scope. He guides and stimulates learning not only by means of subject matter but by counseling and association with young people in their extracurricular activities. He is a part of the community, a liaison unit between community and school.

The instruction methods of today are complex and difficult. The teacher cannot substitute warnings and punishment for skill and managerial abilities. Much greater efficiency is expected of him than formerly. He must be effective with all young learners and cannot simplify his responsibility and problems by forcing mediocre and inferior youngsters to withdraw from school.

The characteristics of superior teachers of today are well indicated by the following quotations from the late Glenn Frank, former teacher, author, editor, and president of the University of Wisconsin.

THE TEACHER'S TASK[3]

"Rabbi," said Nicodemus to Jesus, when he paid his now famous night visit to the Galilean prophet, "We know that thou art a teacher come from God."

As the president of a university in which approximately 100 men and women bear the name of teacher, I am interested in this reference to Jesus as a teacher.

If Jesus was a teacher extraordinary, as has been said so many times, what were the essentials of his teaching genius? . . .

He was not interested in giving his hearers new information. He was interested in giving them a new way of looking at all information, old and new.

He was not interested in having his hearers absorb a mass of standardized information, but in having them think about the pressing problems of their own lives.

He was not interested in increasing their knowledge. He was interested in increasing their understanding.

He was not concerned to have them practice in remembering. He wanted them to practice thinking.

Jesus would have a hard time getting an appointment to a $1,500 instructorship in a modern university. And yet, Jesus was one of the great teachers of his day. We must make a place for great teachers as well as for efficient instructors.

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[3] New York *Times*, July 10, 1929.

The Teacher's Prayer

O Lord of Learning and of Learners, we are at best but blunderers in this godlike business of teaching.

Our shortcomings shame us, for we are not alone in paying the penalty for them; they have a sorry immortality in the normal minds of those whom we, in our blundering, misled.

We have been content to be merchants of dead yesterdays when we should have been guides into unborn tomorrows.

We have put conformity to old customs above curiosity about new ideas.

We have thought more about our subjects than our object.

We have been peddlers of petty accuracies, when we should have been priests and prophets of abundant living.

We have schooled our students to be clever competitors in the world as it is, when we should have been helping them to become creative co-operators in the making of the world as it ought to be.

We have regarded our schools as training camps for existing society to the exclusion of making them working models for an evolving society.

We have counted knowledge more precious than wisdom.

We have tried to teach our students what to think instead of how to think.

We have thought it our business to furnish the minds of our students when we should have been laboring to free their minds.

And we confess that we have fallen into these sins of the schoolroom because it was the easiest way. It has been easier to tell our students about the motionless past that we can learn once for all than to join with them in trying to understand the moving present that must be studied afresh each morning. From these sins of sloth may we be freed.

May we realize that it is important to know the past only that we may live in the present.

Help us to be more interested in stimulating the building of modern cathedrals than in retailing to students the glories of ancient temples.

Give us to see that a student's memory should be a tool as well as a treasure chest.

Help us to say "do" oftener than we say "don't."

May we so awaken interest that discipline will be less and less necessary. Help us to realize that, in the deepest sense, we cannot teach anybody anything; that the best we can do is to help him learn for himself.

Give us a reverence for our materials, that we may master the fruits of our particular fields, but help us to see that all facts are dead until they are related to the rest of knowledge and to the rest of life.

Help us to see that education is, after all, but the adventure of trying to make ourselves at home in the modern world.

May we be shepherds of the Spirit as well as the masters of the mind.

Give us, O Lord of Teachers, a sense of the divinity of our undertaking. Amen.

Teaching today is a calling of great importance—a calling for people of unusual abilities. It offers an opportunity and challenge to service far greater than other callings do. Paid three to four times the salary of his predecessor of 1900 and far better trained, the teacher of today can be, if he will be, one of the most highly respected individuals in his community. He can live a life of great service to those he trains for life as well as to his nation and to the world.

QUESTIONS, PROBLEMS, AND EXERCISES

1. See if you can locate in the library (a) an account of the classroom activities of some teacher before 1900 and (b) a book on methods of teaching published prior to 1900. Compare with the description of the older teaching given in the first part of Chapter 1 of this book.
2. In what ways do you think teaching procedure today is inferior to that of a half-century ago or earlier?
3. Explain fully what is meant by the wasteful recitation procedure.
4. Explain and give examples of learning by doing. Can you learn by merely thinking?
5. What kind of problems would be suitable for research by teachers?
6. Be prepared to give a five-minute talk on "Education for Intelligent Citizenship" or "The Most Important Purpose of Public Schools."
7. Be prepared to give a five-minute summary of "The New Teaching versus the Old."
8. Be prepared to give a five-minute talk on "The Opportunities of Teachers to do Important Things."

Chapter 2

THE HIGH SCHOOL STUDENT OF TODAY

1. The High School Age

Adolescence, a Period of Reconstruction.—At least from a physical and physiological point of view, the high school age is one of transition and transformation. In this period the boy becomes a man, the girl a woman. Not only does growth become accelerated, but new types of growth get under way, particularly with respect to those organs and parts of the body characteristic of sex and related to reproduction.

In addition to physical and physiological changes, it is well known that other very important changes take place—changes in the fields of interest, a greatly increased insistence upon self-direction, the development of new love emotions and sex interests, and increased interests in vocation and organized social life. The fact that these changes take place at an accelerated rate of speed in the high school period is of much importance for educational practice. In recent years there has been an increasing tendency to believe that, inasmuch as mental traits develop rather gradually throughout this period, emotional traits too probably develop gradually rather than in a saltatory fashion.

For thousands of years, various culture groups have recognized the phenomenon of pubescence and the attainment of adolescence. In primitive tribes boys and girls were separated in their play and each sex group was given a specialized training for the type of life which its members would be called upon to participate in as adults. Likewise the Roman boy who would be a citizen was prepared in pubescence and early adolescence for adult responsibilities and was given his toga at the age of 16.

Physical Changes.—The adolescent usually experiences physical growth with such rapidity and at times with such unevenness as to cause strains which may affect his behavior in ways which call for understanding and adjustment. Rapid increases in height, and often in weight, result in corresponding development of muscles and in demands for food and for rest, at the same time that a broadened range and increased intensity characterize his interests. The heart usually outgrows the arteries to such an extent as to put extra burdens on the heart and to raise blood pressure. Glandular growth and readjustment also call for coordination that sometimes is lacking to the extent of definite malfunctioning.

Because of the obvious physical growth, parents and teachers are usually conscious of the transformation taking place and are inclined to make allowances for changes in behavior patterns. They are inclined not to take too seriously the failure of the adolescent to meet all of his responsibilities satisfactorily. To make allowances intelligently is one thing, but to become indifferent to the need for guidance and merely to hope that he will "outgrow" alarming deviations from desirable behavior is quite another. While one should be sympathetic and patient with the adolescent at this somewhat critical time, one should not ignore all manifestations of unsound developments merely by a pious declaration that the adolescent is "in that awkward stage" and that soon he will attain to a more acceptable pattern of performance.

Social Readjustments.—The adolescent is also making many new social readjustments and in these he needs skillful, and not too coercive guidance. At this time he branches out, acquires a larger group of associates, and forms new group affiliations involving more definitely members of the other sex. He should be able to find readily satisfying and wholesome group work and recreational activities.

Adolescence is a time for the generation of very valuable social awareness and sensitivity and ideals of a social nature—the welfare of humanity, of the community, of the school. The adolescent is at the same time more self-conscious and is therefore likely to perform, or fail to perform, in ways discouraging to parent and teacher. The latter must learn not to take such matters too seriously, certainly not in a personal way. Unwillingness to recite or to appear in a public performance appear inconsistent with the desire to excel and to win the approval of school associates. Indeed recognition by his "gang" ranks close to the top in the adolescent's scale of values. In many instances his propensity to be funny is an expression of that desire as well as a device to cover up his real thinking. He is peculiarly sensitive to group loyalties and to the group customs and opinions of the moment.

Emotional Adjustment.—Because of the glandular growth and adjustments that are taking place, the adolescent is peculiarly susceptible during this period to emotional crises and to emotional experiences in general. He is fortunate if he is able to avoid excessive or prolonged worries about his own social acceptability, about his limited abilities, and about matters of sex, religion, and family, or for that matter about anything. As he realizes that he is entering a new world, he is prone to feelings of doubt and insecurity as well as of confidence. He is susceptible to dangerous worries relative to the certainty that he will enter upon his new role in an acceptable manner and the degree of acceptability.

Because of this state of mind teachers should avoid causing the adolescent to feel humiliation or anger, or to brood about injustices and lose confidence in himself. Care should be exercised not to force youngsters to rationalizations of an undesirable sort or to the finding of vicarious or excessive satisfactions in daydreaming rather than in his own real experiences. He should find frequent outlets for his more healthful emotions: in competition, in adoration of characters in literature and public life, and in group loyalties of a wholesome nature in wholesome activities.

On the other hand, care should be taken not to shield the adolescent too greatly. He should be trained in responsibility. Parents in the last generation have often done irreparable damage to their children, and to some extent teachers have made the same mistakes. The immature child must gradually acquire independence and responsibility. This is the period in which, more than at any other time, he must give shape to his philosophy of life and in which he must develop his scale of values. Whether he emerges a strong, healthy personality, capable of meeting the responsibilities and adversities of life will depend largely upon the degree to which his adolescent experiences have been favorable to that type of growth.

2. Values Peculiar to Youth

In dealing with adolescents, teachers must keep in mind that their scale of values is not precisely the same as that of adults, and certainly not the same as that of prepubescent children. Certain of these values must never be ignored. The most important of them were set forth by the senior author of this volume in a publication of the American Youth Commission.[1]

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[1] This discussion of values is included in *Secondary Education for Youth in Modern America,* Washington: American Council on Education, 1937, pp. 32-42, on which the rest of this section is based.

To Find a Satisfying Place Among Fellow Youth.—The immediate yearnings and difficulties of youth fall largely into a few categories. Perhaps most vital, especially until the age of 18 or 19 is reached, is the deep-seated desire to find a satisfying place among other youths. This problem of adjustment for the adolescent is no less important and gripping to him than are the problems of war, finance, politics, and religion to the adult. Upon the solution of no other problem perhaps does the wholesome personality of the individual so much depend. He wishes to be accepted by his fellows. He craves their friendship, respect, and admiration. He desires congenial companions at work and at play. He wishes to appear well in their eyes—as to dress, person, speech, interests, and skills. He desires to possess what he thinks are normal relations with those of the other sex. He wants, above all, to excel in those characteristics and activities which are normally high on the scale of his fellows. Excessive doubts and fears as well as failures in these respects arouse despair, resentment, and horror and leave in their trail the germs of an antisocial character and mental ill health.

To Experience Personal Achievement.—Closely allied to the desire to find companionship and admiration among fellow youth is the desire to have "abilities," or, perhaps to state it better, the fear of not having abilities. It is normal and beneficial for young people to explore constantly their abilities in various fields, with expectation of success. To fail in anything attempted is, at least for the time, disconcerting. To fail in those things in which he is most interested is very unfortunate. To fail in almost everything is disastrous. For the healthy nourishment of a strong personality and desirable character, he must succeed in something which to him seems worth while. Many may survive failures in a number of fields and laugh them off. Nature has fortunately endowed us with a means of preserving self-respect and courage, in the form of a tendency to lose interest in those fields of activity in which we do not do well, although this characteristic is found in varying degrees among individuals.

To Enter Into and Succeed in Vocational Life.—Children and youth likewise look forward with expectation, optimistic anticipation, fear, and doubt to finding their way into a vocational pursuit which will furnish satisfying activities combined with the desired social and monetary returns. The importance of this problem grips every boy more firmly as he approaches the end of his teens. The problem of future adjustment to the vocational world, now becoming imminent, increases through the high school period. The boy craves information about himself and about possible callings. He seeks an answer to the questions "What am I best fitted for?" "What chances of success have I as a ——————?" and "What are the avenues of entrance to and the rewards of ——————?"

Compared to the young person of preceding generations, the youth of today suffers conspicuously from the fear that he will not find any suitable employment. There is a clashing conflict between what the experience of previous generations has led him to expect on the one hand and his fears on the other that he will arrive at maturity only theoretically an economic citizen, actually an outcast.

It is normal and right that every child should look forward with absolute assurance to finding, when he becomes an adult, a place in the work of the world, a place which will enable him to maintain self-respect and a tone of optimism. But to youth of today the golden age of opportunity seems to have passed.

The burden of our transition from a young, pioneer nation to a mature and more stable nation is particularly difficult for the high school student of today. His is the first generation to face the fact that the opportunities to rise from office boy to president have been somewhat deflated, in spite of the fact that the tradition is still kept alive in fancy by the biographies of the fortunate self-made men of his father's generation. In other words, he has been brought up with ambitions which for the great mass of young people cannot possibly be fulfilled.

Soon after young people become physiologically mature they normally think of becoming economically independent, assuming marital relationships, and establishing homes of their own. If they are denied the opportunity to do these things and to satisfy their desires for good clothes and social life, the temptation to employ illegitimate means is strong. Those who would find the cause for the lowered moral tone of older adolescents and young adults should look here first.

To Be Able to Establish and Enjoy a Happy Home.—It is fortunate that youth today, despite our immediate economic situation, still look forward to marrying and establishing a home. In fact, they are now giving more serious attention to this aspect of their lives than previously.

Young men and women of today are prone to give great consideration to the problem of obtaining a mate of superior qualities. This may be the result of their knowledge of heredity and disease, of greater attention to psychology, or of the increase in divorce.

While, unlike jobs, the relative supply to demand of mates has not decreased, there is the growing realization that the supply of superior obtainable prospects is limited.

To Understand and Improve Political and Economic Conditions.—It is encouraging to note that the modern youth is more than ever before interested in the political and economic life of his country. Unlike the youth of many foreign countries where the advanced maturity of economic and political structures has reduced the possibility that any individual will rise from obscurity to prominence, the American youth until now has been conspicuous for his childlike innocence and disinterestedness in the problems of state. He felt assured of his future and worried little about such matters.

Today that is somewhat changed. The rapid growth of discussion groups in schools and colleges has alarmed adults to whom such a display of adult-like interest seems a relatively unnatural performance for American youth. Youth has become so active and so interested that faculties and administrators, perhaps partly in an effort to disclaim responsibility when the more conservative fathers raise voices or eyebrows, are prone to look for some outside stimulus —"communistic" or otherwise. It does not seem "regular" that youth unprodded should branch out beyond football, fraternity, and homework to form groups for the improvement of economic and political conditions and for defense against the tendency of contemporary adults to bar them from gainful employment, to bequeath them an excessive debt, or to expose them unnecessarily to the dangers of another war.

The typical intolerance of young people for inefficiency and stupidity makes them critical students of the apparent waste and ineffectiveness of government. The advantages and merits they take for granted. That their fathers have not been able to do better than is indicated by prevailing conditions is to them proof positive of the limited competence of the previous generation. Ignorant of the compromises necessitated by factors they have not yet come to understand, they constitute, until better versed in the field of political science and arts as it actually exists, a fertile field for those who would sow seeds of dissatisfaction and utilize the impetuousness of youth for ulterior ends.

To Participate in Enjoyable Recreational Activities.—It is not novel, nor peculiar to youth, to seek a satisfying social and recreational life. Normally one desires to play at sports or indoor games, to experience courtship, and to be entertained by music, "movies,"

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plays and other gratifying stimuli. Youth also wants to experience a vicarious life through the media of printed material, public discussions or exposition, and "movies." If the life of youth is to be made as complete and satisfying as possible, education should be carried on under conditions which allow the satisfactions of these urges, keenest in childhood and adolescence. That is necessary and, with respect to future mental health, wise. Guided participation in the leisure side of life is the best preparation for a complete adult life, for by such means the probability that either youth or adult will satisfy his strong primitive urges in ways not conducive to the welfare of society or the individual himself may be materially decreased.

To Resolve Life Complexes.—In the mind of today's youth, probably even more than in previous generations, are many conflicts for which he seeks the solution. Like all human beings he has a natural tendency to find room in his thinking for an outside or superhuman force or being, yet modern intellectualism and skepticism discourage him from doing so. He is suspended between the religious beliefs and doctrines of his grandfathers and the tendency of the generation just preceding his toward liberality and doubt. He oscillates between a denial of a superhuman force or being and an instinctive reversion in time of stress to such a force or being.

He likewise finds it almost impossible to settle the conflict between normal urges related to sex and the taboos imposed by adults which seem to imply that anything related to sex is unworthy and unnatural. He becomes impressed by the importance of sex, but is bewildered at the failure of adults to enlighten him. The very fact that sex is obviously so strong a factor in his own makeup is often interpreted, with danger to the individual, as indicating abnormality, perversion, or degeneration. The attempt on his part to shut out this normal, instinctive element from his consciousness is not only futile but, if made in the typical manner implying guilt, is definitely dangerous to mental health.

Age-old beliefs are weakening, and today's youth is fully aware of it. He is definitely susceptible to modern individualism, sophistication, and what he believes to be scientific and rational truth.

Faith is surely, though dangerously, giving way to reason, and the youth of today seems anxious to accelerate the transition. He has become a worshiper of the standards of intellect as opposed to those of heart. His ideal is to be clever and wise, not good and conforming. He has seen the retreat and collapse of prejudices to which his respectable grandfather clung so tenaciously—prejudices against cards, dancing, liquor, Sunday amusements, divorce, love and sex plays, and cheap fiction. He has little respect for the stern virtues of his grandparents—industry, abstinence, continence, contempt for play—merely as expressions of character. He is not interested in them except as they may be directly necessary for specific immediate ends. He has yet developed no substitute for their stabilizing and motivating attitudes.

Youth no longer is willing to accept as authoritative those educational theories and practices which deliberately avoid contacts with modern social, aesthetic, and scientific culture, which concentrate on linguistic and verbal learning, which keep pupils in ignorance of the world in which they will live, which give a training based upon discredited theories of developing general mental powers, and which offer the fragments of vocational education for a small number of types of occupations already badly overcrowded.

American youth of former generations has been rollicking, happy-go-lucky, willing to gamble on the national resources and the elements of fortune peculiar to a young, pioneer, and rich nation. Unlike its European counterpart, it has been distinguished by an apparent economic and political immaturity and unconcern and has figured little in political demonstrations or conflicts. The present generation of youth has taken on significantly more serious and interested attitudes. It asks to be instructed not in knowledge far removed from present problems, but in the events and tendencies of the day. A large and growing proportion of the young people in high school and college do not respect teachers and professors who lack the knowledge or courage necessary to interpret the present-day world to their students and are resentful of those educators who evade discussion of controversial problems.

3. Changes in Character of High School Pupil Population

Some years ago the late H. G. Wells, famous British philosopher and writer, proposed in an article which appeared in a popular weekly periodical in this country that we determine what are the best methods of teaching and that we standardize teaching procedures and have all teachers follow those procedures. As naive and absurd as this appears, it is not much more so than the hopes that many have entertained that teaching could be reduced to a science of laws and techniques and that an ideal curriculum could be developed which could be followed for years or decades.

Young People Change with Time and Place.—If for no other reason, curriculum and teaching procedures vary from school to school and from decade to decade because in many important respects learners vary according to time and place. Methods of managing, interesting, and stimulating boys and girls which were in use a decade or so ago in many communities are not so successful today. This is true not only because in the high school of today we have practically all boys and girls of high school age, and hence all types of them, but also because the whole pattern of thought and interests of young people as of older people changes with the passing of years just as do styles in clothing and in recreation.

The Trend toward Universal Attendance in Secondary Education.—Methods of teaching and the curriculum for secondary schools for more than 200 years in this country and for centuries before that abroad were planned and evaluated on the basis of their appropriateness for the small minority of boys and girls who continued with their schooling beyond the elementary school—principally to prepare for college or to acquire social prestige by avoiding the dilemma of choosing between idleness and going to work. The extent to which secondary school enrollments have increased from a very small percentage almost to universality is illustrated by the data of Table 1.

TABLE 1

NUMBER OF STUDENTS AND PERCENTAGE OF POPULATION OF AGES 14-17 ENROLLED IN PUBLIC HIGH SCHOOLS (GRADES 9-12), 1890-1960 *

Year	Number Enrolled	Per Cent of Population 14 to 17 Years Inclusive
1890	357,813	6.6
1900	695,903	11.3
1910	1,111,393	15.5
1920	2,494,676	32.4
1930	4,799,867	51.4
1940	6,601,444	68.0
1950	7,400,000 †	75.8 †
1960	8,200,000 †	81.0 †

* *Statistics of State School Systems, 1939-40, 1941-42,* U. S. Office of Education, 1944, Vol. II, Ch. III, p. 9.
† Estimated.

The "Other Half."—Although young people of high school age are now attending high school in comparatively greater numbers, it does not necessarily follow that the high school student population is significantly different qualitatively from that of any given previous period. Nevertheless, not only is it more than likely that there are important differences, but there are so many convincing indirect data and bits of evidence that there is little room for doubt. Some of the highly probable differences cluster around the following pupil characteristics:

1. General mental ability
2. Interest in book learning and academic experience
3. Stage of development of self-discipline and industry
4. Susceptibility to leadership and authority
5. Relative economic status of parents and home
6. Cultural morale and atmosphere in the home
7. Level and type of anticipated occupation
8. Level and type of anticipated home and recreational life
9. Current interest
10. Level of development of vocabulary and learning skills

In addition to the fact that young people continue to attend school to the ages of 16, 17, or 18 on the average, as compared to 13, 14, and 15 a generation ago, dull and uninterested boys and girls these days are further advanced in school for their age than similar pupils were a generation ago. Twenty or thirty years ago the lower fourth or third of youngsters were retarded at least one year and, if they stayed on in the school until the age of 16, they rarely went beyond the first year of high school, if indeed they went beyond the elementary school. Today, the child is ordinarily promoted every year in the elementary school. As a result, many reach high school and spend at least two years there who previously would never have entered high school at all. Those students who are only slightly superior in ability and interest and are of the type which formerly left school before the tenth grade are frequently referred to as the "other half." They do not respond adequately to methods of instruction which were at least reasonably effective with their counterparts in previous generations.

Changes Affecting All High School Students.—In addition to these elements of change, there have been significant changes in life in the United States in recent decades which condition the educational program for high school boys and girls. Among those may be mentioned the following:

1. Competing agencies for the attention of young people—the radio, the "movies," commercialized recreation, and the automobile

2. Greatly decreased effectiveness of home and church life for character education
3. Greatly increased amount and effectiveness of propaganda in the newspapers and periodicals, over the radio, and through other media of advertising and media for influencing thinking and opinion
4. Lack of opportunity for work experience in and around the home and in the community
5. Greatly decreased effectiveness of parental discipline and guidance
6. Increased dangers to healthful personality growth as the result of (a) excessive attention and "humoring" by parents and relatives, (b) too stimulating and rich social experiences, and (c) the stimulation of economic and vocational ambitions beyond the possibility of attainment except by a small minority
7. Greatly increased tendency of relatives, teachers, and other counselors to train young people to think and plan in terms of benefits to themselves and of rights rather than responsibilities in a democracy such as ours
8. Changed attitude of people in general toward primitive and coercive measures
9. Greater freedom allowed young people in their social activities
10. Greater incidence of change of residence with its uprooting effects, change in social environment, and resulting decrease in social stabilization

Thought should be given to the significant characteristics of the "other half" of the present-day high school population—the students who for one reason or another would not have attended high school a generation ago—with a view to seeing how teaching should be adapted to meet their needs and to be effective with them. Attention will be turned now to some of the more significant differences between the high school boys and girls of today and those of previous generations and to the important influences upon them as compared to the high school youth of a generation ago with the conditions and influences of that day.

Differences in Native Ability.—Discussions of the differences between the typical high school student of today and the student of previous decades emphasize—probably overemphasize—the differences in native general ability. In previous generations, some students of mediocre ability stayed on through high school and a majority of the upper half in general mental capacity never attended high school. We do not have many comparative measurements to throw objective light on the matter. Until 1925 intelligence tests were not widely given, and because of the greater opportunities today to develop capacities, mental measurements of 1925-1930 are not entirely comparable with those today. While available measures of differences seem to indicate that the average high school student is only slightly inferior in intelligence to the high school student of twenty to thirty years ago, there is a definitely higher percentage of really dull young people in high school today.

Differences in Discipline.—The adolescent of today, compared to those of previous generations, has not been brought up with a high degree of responsibility or with very material respect for industry or work. Standards of that nature are conspicuously absent in the home of today. In contrast, pleasure-seeking, actually frowned upon somewhat in previous generations, has become not only respectable but is engaged in enthusiastically by old and young alike.

Also of significance in this connection is the fact that children of today have been brought up differently with respect to the matter of responding to the authority of their parents and teachers. Formerly obedience was considered as an essential virtue in children. Today conformity is more the result of reason, negotiation, and compromise. Perhaps the newer way is better, but the change calls for a change in educational procedure on the part of teachers. Where authoritative methods are employed in school, there is today the necessity to retain the attention of the learner. Because of this and other significant changes that have taken place, many former teachers who returned to teaching during the teacher shortage of the early 1940's after a dozen or more years of absence from the classroom were confused and amazed by the relative ineffectiveness of methods which had been at least reasonably successful a decade or so before.

Difference in Home Environment.—The fact cannot be ignored that school experiences constitute only a part of the experiences which determine the nature of the growth of the individual and his future behavior. To be most effective, school experiences must be planned and directed with knowledge of the learner's other current experiences, particularly those connected with the learner's home and family. These include such things as opportunity to study, and availability of, reference materials, the cultural morale and spirit or educational and intellectual ambition, and the educational, moral, and intellectual equipment of parents and older brothers and sisters.

The "other half" comes largely from homes of lower vocational occupations and economic status. The families do not possess a high degree of social prestige and are, therefore, more modest in their cultural objectives and usually in educational plans for their children. Less educated parents are inclined to rationalize and to underestimate the importance of books and formal education. The youth from this type of home does not live much of his life in an intellectual atmosphere and therefore does not have the opportunity to see at home the part that an educated mind plays in the lives of adults. Intellectual interests are likely neither to be generated nor to be nourished in the conversations of the family and relatives. The family radio is not frequently tuned in to broadcasts of cultural programs. In the homes of long ago, the spirit of light entertainment was overshadowed by stern virtues of industry and serious-mindedness. Adults put amusement aside after children arrived and cultivated the spirit of work. However unattractive those homes were, they built a disciplinary basis for study of things not in themselves thrilling or amusing.

The teacher of today, therefore, does his work under serious handicaps compared to those of previous generations. While in days gone by many of those who persisted through high school came from homes of limited cultural possessions, they came in larger numbers from homes where parents were ambitious for the education of their children and where every encouragement was given to them to do well in school. The challenge to the teacher and the responsibility upon him to interest and motivate the "other half" is much greater than formerly.

Differences in Future Needs.—The high school pupil of a generation ago was one in ten, the exception who went beyond the elementary school. Usually he expected to go on to college, or at least to enter a vocation of the upper levels. Those who continued beyond the ninth grade were at least average in intelligence. By reason of their superior intelligence, as well as their high school education, they usually had superior economic status. Courses of study and methods of teaching were, therefore, aimed at the needs of individuals who would follow the more respected vocations and live relatively more cultural lives.

Today, when more than four of every five young people of high school age enter high school and of these more than 50 per cent remain to graduate, it is obvious that the high school population will enter all occupations and live at all economic and cultural levels. The "other half" consists largely of those who will be truck-drivers, farmers and farm laborers, factory and mine workers, retail store clerks, domestic help, hotel and restaurant employees, construction workers, and the like, and who will live on the economic and cultural levels of such workers, either as the workers themselves or as their wives.

Because teachers must select the materials of their courses and teach them in terms of the future needs of the "other half," they are fortunately, though not nearly rapidly enough or completely, abandoning the illusion that the boys and girls who sit in their classes are all to be professional or other types of white-collar workers and to live as white-collar families do. They are beginning to think of the educational needs of future adults who will especially need character with which to face economic limitations and to live at least reasonably happy lives. Teachers are also considering the needs of those who must not only themselves do a variety of things to make a comfortable and attractive home but to plan most carefully financially. Teachers must teach high school boys and girls of the "other half" in such a way as to establish recreational and intellectual interests which will function in future years to provide satisfying leisure activities above the level formerly attained by uncultured people of low economic status.

4. Changes Affecting All High School Students

Present-Day Instruction.—If a Rip Van Winkle who had slept a generation or two were to return to the United States today, the most bewildering thing in the American home would be the presence of electric lights, labor-saving machines, and the radio. He would likewise be enamored of the "movies." The school child of 1900, or even of 1910, lived a fairly prosaic life. The teacher of today has to compete constantly with attractive opportunities for entertainment. Not only do "movies," radios, and an intensified social life for adolescents compete for the time and attention of young people in and out of school hours, but they serve to make study in school seem relatively unattractive. This contrast is especially significant to the boy or girl relatively lacking in intellectual ability or interest or both.

These radically changed conditions accentuate the challenge to the teacher of today. He is faced with the necessity of educating for a world which makes greater demands upon education and which is characterized by keen competition for the time, interest, and attention of young people.

Changes in Agencies of Character Education and Discipline.—Another significant change which gives direction to the effort of the teacher today is the relative ineffectiveness of the church and the relative abdication of the home in the area of character education, to say nothing of the degree to which standards of morals have changed throughout adult thinking and activities. Evidence is abundant that churchgoers today, both regular and occasional (and the latter have increased enormously in recent decades), are not greatly concerned about problems of relatively soft and loose living. Divorce rates have increased a great deal in recent decades. Parents devote much time and energy to playing, dancing, and social amusement. Personal appearance has become one of the nation's greatest sources of business. Drinking of alcoholic liquors is likewise on the increase.

Young people spend much less time with their parents at work and much more in the company of those of their own age, seeking revelry and entertainment. All this is very pleasant and only "sourpusses" would wish to deprive young people and older people of their fun in life. Yet it cannot be denied that these changed conditions mean that the opportunities for effective character education are not as numerous as formerly and that, unless character is to suffer a decline, compensating influences must be set in motion, particularly in the school.

To add to the losses being sustained in this area, there has been the growing tendency of parents, with fewer children and with less necessity for their children's assistance in work around the home and farm, to gravitate toward a policy of "appeasement" which indicates much more concern for obtaining the good will of the children than for educating them. This in many families has descended to the level of a demoralizing competition between mother and father, each seeking to appear more favorably in the eyes of the child than the other.

Parents in large numbers, which threaten to approach totality, seem to wish to leave to the school the problem of discipline and character education. Some adaptation of teaching methods is necessary with children who come from homes where the new parental order is in existence. The old-fashioned methods constitute too great a contrast. They result in student resentment, which not only weakens the influence of the teacher but becomes a source of complaint by the parent. Indeed, the teacher can but recognize the benevolent humoring of young people by their parents and plan his teaching to compensate for the upbringing or lack of it which young people today receive at home.

Changes in Popular Attitudes toward Coercion and Development of Responsibilities.—Another challenge to the teacher is the change in public opinion relating to the use of traditional and coercive measures. Corporal punishment, a major source of motivation a century ago, has fortunately passed from the educational scene. It may be hoped with safety that its twin—*mental* torture—will soon be recognized for its capacity to produce as much pain and more permanent damage. The passing of these twin relics of barbarism, however, forces the teacher to seek other and better means of motivation.

In the past, young people were exhorted to learn to be useful and prepare themselves for service and responsibility. Today, with continued worship of rugged individualism, parents and teachers constantly urge young people to prepare for "success," meaning by that to make much money, to acquire power, and to achieve public recognition. Halos are attached to the self-made man who thumps his chest and gives the newspapers the recipe of his success, almost always omitting the very material factors of good luck, a certain amount of ruthlessness, and frequently the critical advantage of a large amount of capital.

Increased Emphasis upon Self-Interest.—The logical ultimate outcome of this trend, unless checked by education and higher ideals, is a breakdown of civic and business honesty and the development of a class and caste society, a nation of selfish and self-centered materialists. The responsibility of education for individual character and social ethics is great.

Guidance programs and counseling by teachers all tend to center the student's mind on how to make the most money and to acquire power—to get ahead (of others)—instead of how to get the most out of life, and to do one's share in making life better for all.

Lessened Opportunity for Discipline of Work Experience.—Another change in the lives and educational environment of young people that recent decades have brought is the decreased opportunity for young people to profit by participation in immediately useful work experience. Perhaps even more valuable than knowledge of and insight into vocations and vocational life was the development of ideals, attitudes, and habits of industry and responsibility that resulted from engaging along with adults in the purposeful and necessary activities of the home, farm, and community. As John Dewey a half-century ago, A. J. Inglis thirty years ago, and others more often in recent years have pointed out, the value of that participation was far greater than most people realize. Without it, growing up is lacking in an experience "vitamin" which protects against "character rickets" in the form of social immaturity, lack of responsibility, and lack of full inheritance of the adult heritage. Boys and girls become fathers and mothers and yet remain juvenile in these respects.

QUESTIONS, PROBLEMS, AND EXERCISES

1. What are the effects of fluctuations in birth ratio upon numbers enrolled in schools? In what years will the bumper crop of World War II babies be in high school?
2. What are the effects of booms and depressions upon enrollments in high school? Give some examples.
3. In what important ways does the "other half" differ in (a) interests, (b) needs, and (c) backgrounds, from those who are comparable to the high school constituency of 1910?
4. Write a concise summary (about 100 words) of the principal trends in American life which complicate the development of character in young people and state briefly (300 words) what the schools should do about the situation.
5. Write a statement of the values of work experience, its dangers and limitations as part of a high school program, and suggestions for making it effective.
6. What are five important problems in American life for which better education should be given in the schools?
7. Do you think adolescence is a special stage in life? If so, in what respects? What do authorities on adolescence say?
8. What do you think are the important things in life to a 16-year-old boy? a 16-year-old girl?
9. In what ways do many teachers fail to take into consideration adolescent values and special adolescent problems?
10. Make a list of from eight to twelve ways in which instruction today should be different from instruction of twenty-five years ago, in the light of changes in American life and youth problems.

Chapter 3

THE NATURE AND OBJECTIVES OF INSTRUCTION

1. The Relation of Instruction to Growth

Much superficial and inaccurate thinking about the curriculum[1] arises from the failure to see and understand clearly the fundamental relationship between curricular materials and the growth of human beings toward the objectives of education. Many teachers and administrators have never carefully thought through the place of the curriculum in the educational process. Many teachers have accepted the *status quo* as represented by the subject offerings authorized by the board of education and textbooks adopted for those subjects.

Deviations from what has been taught usually grow out of immediate practical influences, sound or unsound, such as the desire to have students succeed in college classes in English or some other subject or the desire to please parents or other individuals or groups in the community. Other changes are the results of the teacher's attempt to follow trends, often without fully appreciating what the trends really are or upon what principles they are based.

Whatever is taught, whether sound or unsound, is justified in the minds of many teachers either in terms of bad psychology, such as a fallacious interpretation of the operation of transfer of training, or in terms of the relationship of interest and effort or in terms of considerations which are really of secondary importance. No approach or consideration in the matter of the selection of curriculum material is sound which is not a direct outgrowth or application of the principle that the curriculum is a contribution to the environment of learners, so selected, arranged, and presented as to influence the growth and future behavior of the learners for whom it was intended.

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[1] *Curriculum* and *curricular materials* are used to refer to the total growth-stimulating materials and situations selected and arranged for instruction and learning in the schools without reference to the limits of any subject, field, or period of time; *course of study* is used to refer to the body of curricular materials, perhaps including some methods, organized for a given subject, for a given period of time.

2. THE DYNAMIC NATURE OF THE INDIVIDUAL

There are certain characteristics of living organisms and particularly of the human being that give education its significance. If teaching and learning are to be most effective, they must be adapted to these characteristics. Briefly, education is the adaptation of the individual to his environment, the changes that take place in him which enable him better to function in the world in which he lives and will live. Teaching is, then, the direction of this adaptation. In other words, it is the management and control, as far as is possible, of the changes that take place in an immature individual. In the following paragraphs this theory of education will be examined in detail.

Growth Is Constantly Taking Place.—Every living organism, plant or animal, is constantly undergoing change. An organism which is not undergoing change is not alive. Even dead organisms usually undergo change. The changes typical of living organisms and those typical of dead organisms differ in one important respect. The organism which is no longer alive is typically in a process of disintegration and degeneration. The living organism is in a constant state of growth and development, though in its most advanced state it may tend towards degeneration.

The most rapid period of growth of various organisms is the first part of their normal life span. It is also in the early period of the organism's life that its growth is most positive and integrative as contrasted with the tendency toward degeneration in the last period of its normal life span. The normal life span for cats is approximately 15 to 18 years, for dogs from 10 to 12 years. It is within the first year of life that cats and dogs make the larger part of their growth physically and mentally, though they may continue to grow both physically and mentally and to undergo change which may be called learning at a decreased rate until death.

Since growth is so rapid in the first portion of the life of the organism, those organisms for whom this period is relatively long have a greater chance to be influenced in their growth by environment, in other words to be educated. The human, therefore, having of all animals the longest period of infancy, is indeed favored by nature.

Growth as the Result of Heredity.—All change in an organism is attributable to two sources. The first of these is heredity. When a seed is planted in the ground, it may be predicted with a fair degree of reliability what its shape, size, and color and in general the pattern of its life performance as a plant will be. To be sure, some influence may be exerted over these matters by control of heat, light, moisture, and other factors in its environment, but the influence of these environmental factors is limited. A carrot seed, for example, may not be developed so as to produce tomatoes, running vines, or large round leaves.

Environment has little or no influence upon the human as to the number of its eyes, ears, legs, or arms. These and many other physical characteristics are strictly a matter of heredity—species heredity, racial heredity, family heredity, or a combination of these. The color of one's eyes, the shape of one's nose, fingers, and ears are only very slightly matters of environmental control, as is the normal color of one's skin.

Growth as the Result of Environment.—Growth, while the result of both heredity and environment, is in some respects much more a matter of heredity. In other respects, environment is the more important factor. Even in physical growth environment may wield an important influence within the limits set by heredity. It is difficult to influence height and weight, yet it can be done in most individuals through nutritional processes. Height can be so influenced only in childhood, but weight at any age. Speech and other skills in expression are acquired, not inherited, as are ideals, most if not all of our attitudes and interests, and our physical as well as our mental skills.

In all directions, however, limits to growth are set by heredity—by the species of the animal and the heredity of the individual. These hereditary limits are apparently laid down in the character of the tissues of the cortex and nervous system especially, but also in all his physical structure. The capacity of a bird, for example, to acquire a language is indeed very limited as compared to the capacity of a normal human being. The capacity of the human for growth is an individual as well as a racial matter. Some human beings learn much more rapidly and are able to learn much more difficult things than others. Racial differences in capacity for growth are much less significant than those among individuals within the same race.

The Course of Study and Methods of Teaching as Environment.—This principle of hereditary limitation of capacity for growth is universal. No organism is capable of unlimited growth in any direction. Those who have to do with the guidance and stimulation of growth must be familiar with the limitations of the individual whose growth they wish to influence. The curriculum-maker, and the teacher to the extent he is a curriculum-maker, must know the limits of growth of the individuals for whom they would control environment for the purpose of influencing growth.

From all this follows a most important conclusion. It has been pointed out that growth is constantly taking place and that growth is determined by heredity and environment. From the moment of birth, even from the beginning of embryonic life, heredity factors are fixed, and nothing can be done to change them. If growth is to be influenced, it must be through environmental channels. It has often been said that "experience is the best teacher." That cannot but be true, for experience is the *only* teacher. If the growth of the organism is influenced in any way except through its experience, the result is *not* learning—it is inheritance.

With these things in mind it should be clear, then, that the function of the school is to provide an environment which will result in influencing growth to a greater degree, and in more desired directions, than would result from the experience the learner would ordinarily come to have. *The curriculum and methods of teaching are no more than provisions by means of which appropriate educative experiences are assured.* They may include anything which will cause the learner to act, feel, and think, presented in such manner as will cause him to act, feel, and think, as it is desired that he shall act, feel, and think in the future. It follows naturally that the curriculum and classroom procedures are not to be thought of merely as means of causing youngsters to learn certain sets of materials or even to learn the heritage of the race. No element of our cultural heritage is a thing of intrinsic value, to be "passed on" to the young. It is a *means to an end* and must be so considered. The end is the kind of individual that we set out to produce—an individual who lives happily and with benefit to society.

The Criterion of Educational Values.—It is the recognition of this important basic truth that enables one to understand and to appreciate adequately the place of guidance and other "extra-curricular" activities in education in proportion to their influence upon growth. It is the failure to think through and back, to and from, this basic conception which leads to the belief that certain curriculum materials have a privileged place in the school regardless of their potential contribution to the education of the learner.

By means of this basic criterion one may judge the educational validity of all types of curriculum materials and methods of teaching—pictures, excursions, assembly programs, discussions, conferences, and community participation, as well as reading material, recitations, pupil writings, and teacher talk. Anything in school or out, in books or out, in subjects or out, which will cause pupils to have educative experiences, that is, experiences resulting in desirable growth, has a legitimate place in the curriculum in proportion to its influence upon the type of growth desired. This clearly means not only that the educational environment of the school includes all extracurricular activities, including assemblies and guidance service, but that all such activities and services should be planned, carried on, and evaluated according to the same basic philosophy as the rest of the curriculum.

3. The Objectives of Learning and Teaching

The objectives of learning and teaching must be conceived as the changes one wishes to bring about in an individual. Perhaps teaching should be thought of as bringing a youngster into contact with his environment under such conditions as will influence his growth in the desired direction. How one acts, feels, or thinks, is, as has just been pointed out, determined in large part by how one has acted, felt, or thought in the past. If, therefore, it is desired to influence the actions, feelings, or thoughts of individuals, it is necessary to see to it that the environment of these individuals is such as will cause them to act, think, and feel in ways conducive to acting, thinking, and feeling as desired in the future. But of course, the whole process involves knowing what actions, feelings, and thoughts are desired. If it is desired to influence growth, one must first decide upon the fundamental question "growth towards what?" What kind of individual do we wish to produce?

Statements of the Objectives of Education.—There have been in the past hundreds of notable statements by individuals or groups of individuals regarding the aims of education. Some of these have been in terms of *abilities* of individuals, e.g., clear thinking, forceful speaking, and ability to get along with others. In recent decades the more notable statements have been formulated in terms of the *functioning* of the individual in certain stated areas of activity in which almost all individuals are certain to be called upon to function.

Some of these statements emphasize "individual" development, i.e., the objective of education is to develop to the fullest extent the potential powers of the *individual.* Some emphasize development of the individual for his own benefit, others for the benefit of society, and still others for the benefit of both.

It should be clear that the complete development of all the powers of the individual as an aim of education is an abstraction which will not bear careful scrutiny. There are "powers" which had better be left undeveloped. There must be a *selection* of "powers," and the selection must be in terms of some *set of ultimate values,* e.g., earning a living or social cooperation. Otherwise powers of destruction or powers of no considerable value to anyone might well be thought of as the objectives of education.

The more important recent statements of educational aims in terms of functioning in areas of activity are based upon the fundamental assumption that education should serve the welfare both of the individual and of society. The following formulations are illustrative:

North Central Association of Colleges and Secondary Schools [2]

Objectives of secondary school curriculum:

1. To maintain health and physical fitness
2. Exploration of vocations and vocational efficiency
3. Successful social relationships: civic, domestic, community
4. Right use of leisure

Harl Douglass, for the American Youth Commission [3]

1. Citizenship in local, national, and worldwide civic, recreational, economic, and religious groups
2. Home membership—domestic compatibility, rearing of children, purchasing and consumption of goods and services
3. Enjoyment of life—recreation and other leisure occupations, appreciation and enjoyment of environment in general
4. Physical and mental health—sound physical and mental conditions and healthy personality
5. Vocational effectiveness—ability to contribute to the economic assets of society and to market contributions
6. Continued learning interests and abilities to read, to think, to make numerical computations, and to study most effectively

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[2] *High School Curriculum Organization,* Ch. II.

[3] *Secondary Education for Youth in Modern America,* Washington: American Council on Education, pp. 17-25.

Educational Policies Commission[4]

The Objectives of Self-Realization: The Inquiring Mind, Speech, Reading, Writing, Number, Sight and Hearing, Health Knowledge, Health Habits, Public Health, Recreation, Intellectual Interests, Esthetic Interests

The Objectives of Human Relationship: Respect for Humanity, Friendships, Cooperation, Courtesy, Appreciation of the Home, Conservation of the Home, Homemaking, Democracy in the Home

The Objectives of Economic Efficiency: Satisfaction in Good Workmanship, Occupational Choice, Occupational Efficiency, Occupational Adjustment, Occupational Appreciation, Personal Economics, Consumer Judgment, Efficiency in Buying, Consumer Protection

The Objectives of Civic Responsibility: Social Justice, Social Activity, Social Understanding, Critical Judgment, Tolerance, Conservation, Social Applications of Science, World Citizenship, Law Observance, Economic Literacy, Political Citizenship, Devotion to Democracy

It will be observed that these three statements are not fundamentally different from that of Herbert Spenser almost a half-century ago in which he defined education as preparation for "complete living," which included activities in five principal categories in the following order of importance: (1) self-preservation, (2) rearing and discipline of offspring, (3) economic life, (4) social and political relations, (5) leisure.

Essential Relationships.—To summarize, it is the purpose of education to so stimulate and guide the growth of the individual that he will function effectively in certain areas and activities of life upon the importance of which there is fairly general agreement among careful students of education—vocation, home, citizenship, and enjoyment of leisure—and will also possess in high degree mental and physical health and vigor and the skills and interests appropriate to most effective learning in the future. The curriculum must be the best possible selection and arrangement of stimuli to experience resulting in the maximum growth toward the kind of person who will function effectively in the areas indicated by a sound statement of the objectives of education.

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[4] Educational Policies Commission, *The Purposes of Education in American Democracy*, pp. 39-50.

At all times in the organization and revision of the curriculum, the general objectives of education must be kept in mind and a balance maintained so that growth will be stimulated toward all objectives. Citizenship and health should never be subordinated or neglected in favor of education for vocation or leisure, nor vice versa. Each general objective of education must be analyzed and broken down into limited objectives or types of human growth which are essential to or contribute greatly to the attainment of the objective. Such an analysis will not only contribute to the selection of curriculum materials but is almost essential to any high-grade curriculum planning.

4. Types of Educational Growth or Educational Outcomes

Types of Educational Outcomes.—For the purposes of this discussion, it is convenient and practical to think of the outcomes of learning experiences as belonging to different classes according to their nature. Among the types of educational outcomes are the following:

1. Information of a detailed factual nature:
   America was discovered by Columbus in 1492.
   A foot is equal to twelve inches.
   Carbon dioxide is used in a common form of fire-extinguisher.
   Water is made of two parts hydrogen and one part oxygen.
   London is the capital of England.
2. General principles and concepts:
   The square of a binomial is the sum of the squares of the two terms of the binomial plus or minus twice their product, the sign of the cross product term being that of the second term of the binomial.
3. Understandings, meanings, definitions, general concepts, orientations:
   The meaning of democracy
   The concept of evolution
   Orientation in a new community or school
   The meaning of "cartels"
   The significance of endocrine glands in physiological processes
4. Skills emphasizing mental activity:
   Ability to add, subtract, multiply, etc.
   Ability to think logically
   Ability to outline or abstract printed materials
   Ability to translate French

5. Skills emphasizing motor activity:
    - Riding a bicycle
    - Dancing
    - Operating a machine
    - Skating
6. Habits:
    - Various habits of courtesy, e.g., saying "Thank you" when favored
    - Various habits of neatness, e.g., putting away tools after use
    - Various habits of healthful and sanitary living, e.g., brushing of teeth before retiring
    - Various habits of thought, e.g., always postponing permanent decisions until all, or practically all, pertinent data have been considered
    - Various habits of personal appearance, e.g., shaving every morning
7. Ideals:
    - The ideal of being courteous
    - The ideal of being honest
    - Desire to be well thought of
    - Desire to be like a certain person
    - The desire to be respected as a good worker
    - The desire to be of service to one's fellow men
8. Interests:
    - Interest in national public affairs
    - Interest in flowers
    - Interest in airplanes
    - Interest in skillful speech
    - Interest in improving one's own social graces
    - Interest in advances in the field of medicine
9. Tastes:
    - Liking for good literature
    - Dislike for ostentatious dress
    - Liking for exercise
    - Liking for company of intelligent people
    - Prejudice against cheap literature and low-grade "movies"
10. Attitudes:
    - Open-minded in matters of religion
    - Appreciative of the good qualities of the Chinese
    - Fair opinion of people of low economic status
    - Favorable to democracy
    - Unfavorable to unfair practices

Each of the objectives of education, e.g., effective citizenship, recreational efficiency, domestic competency, is achieved only by the development of contributory psychological outcomes of several, if not all, of the ten types outlined in the foregoing. The curriculum exists for the purpose of providing the experience which will guide and stimulate the growth and development of the appropriate psychological outcomes and therefore must be so chosen, arranged, and brought into contact with the learner as to produce those outcomes which are indicated from an analysis of the objectives of education.

The determination of what should be included in the curriculum may best be made by proceeding somewhat as follows:

1. Determine the objectives of education in terms of the kind of end product desired, e.g., the good citizen, vocational competence, etc.
2. Determine for each of the characteristics of the kind of person desired the necessary or contributory information, attitudes, interests, skills, habits, tastes, concepts, principles, and understandings.
3. Select and arrange according to pupils' interests, abilities, and previous growth such curricular materials as will result in the development of the necessary information, skills, attitudes, etc.

Upon first thought this procedure seems quite logical and practical. If these determinations and selections could be made objectively and accurately, we would indeed be well on our way toward a science of education. Needless to say, however, the matter is not as simple as that. There are too many factors involved, and too much information is needed, particularly in step 3, which is not available. Curricular materials result in different experiences in different individuals, and experiences apparently alike result in different influences upon growth, to say nothing of the fact the school is only one, if indeed a most important one, of the sources of environmental influences upon growth.

Types of Behavior Components.—Nevertheless it is a useful procedure, almost indispensable to clear thinking about the curriculum, to break down each of these principal areas or objectives of education into smaller units. There is not any one thing that we can call good citizenship. It is made up of a great variety of components in behavior, and each of these is a phase of growth which requires guidance and stimulation. To enumerate even the majority of these would involve more space and time than are available here. They tend to fall into categories, however, and the good curriculum is balanced in that it does not fail to provide stimuli for all categories.

Let us review briefly these categories as they apply to good citizenship. Being a good citizen involves each of the following:

1. *Knowing what is right and effective in the society in which the person is a citizen.* This knowledge consists of some which must have been learned previously, particularly fundamental principles, some which the citizen will most probably possess incidentally to his life in the society and some which he will have to acquire as the specific needs arise.
2. *Being willing to behave in a way which is right and effective.* This may be in part a matter of heredity, but it is probably in larger part a matter of learning. To insure right and effective behavior, the individual must be invested with appropriate ideals and attitudes and he must be kept from the development of unfavorable ideals and attitudes, e.g., ideals of excessive personal power or gain, ideals of racial, national or regional supremacy over others, attitudes of ill will or contempt toward other groups or classes of society, and attitudes of indifference to matters of honesty, sexual regularity, the welfare of others, etc.
3. Being willing and able to behave in an appropriate and effective manner also involves the *possession of interests which will lead one to read and investigate and to become informed relative to matters* upon *which intelligent decision must be made* by the citizenry of the society in which one lives and to discharge the duties of any office to which one might be elected—e.g., labor problems, international relationships, various types of private and public social security.
4. *Developing appropriate skills*—skills in getting on with others, in self-expression, in thinking clearly, and in evaluating what he may read or hear on questions confronting or likely to confront citizens of his time.
5. *Acquiring wealth of appropriate habits*, so that right and effective behavior is only to a small extent a matter of conscious decision. It becomes more and more automatic due to habits of industrious, honest, thoughtful behavior.
6. *Acquiring a working collection of useful concepts and basic general ideas* which enables the citizen to understand and evaluate human experience and proposed lines of social action. He knows, for example, what constitutes democracy, communism, fascism, and socialism. He is not satisfied with cheap substitutes for democracy and is not stampeded by fine-sounding but fallacious doctrines or deceived by the application of terms like *communism* or *fascism* to practices which are really democratic in nature.

The foregoing brief analysis might well be expanded into an analysis which would occupy a sizable volume in itself. No teacher would be capable of carrying in mind all the possible skills and attitudes which we may call *behavior components* even should he once commit them to memory. Indeed he must become so oriented in such matters that he recalls them in service as an artist, not as a scientist.

The teacher and any one else participating effectively in course of study construction must think through what information, concepts, habits, skills, interests, ideals, attitudes, tastes, and appreciations are required for good citizenship, health, vocational efficiency, recreation and leisure, and home leadership and efficiency. This is an important intermediate step which can be eliminated or skimped only at the peril of poor course of study construction. Only after such a determination can one safely proceed to plan for experiences for learners which will result in anything like the maximum contribution of school subjects to the aims and objectives of secondary education.

Behavior Components and Instruction.—Each of the objectives of education is achieved only to the extent that appropriate behavior components have been acquired. Vocational competence consists of appropriate skills, habits, information, attitudes, and interests. Some of these are general or universal in that they apply to all or a great number of specific occupations. Some are quite specialized in their application. Some behavior components—e.g., attitudes toward industry, skills in reading—are involved in several, if not in all, objectives of education.

It is the function of instruction to stimulate experience which will result in desirable growth, i.e., the acquisition to an optimum degree, considering time limitations and the capacity and maturity of the learners, of as many as possible of the behavior components involved in the various objectives of education. Behavior components should be acquired in proportion to the importance of the contribution which each one makes to the attainment of the educational objectives and the number of objectives which it aids the learner in attaining. It now becomes increasingly clear how complicated the matter of adapting instruction to objectives really is, especially when one recognizes that with the passage of time there is certain to be an increase or decrease in the relative contribution of some of the more specific components (certain items of information, specific skills, etc.) to a given objective of education.

Concomitant Behavior Outcomes.—The process of curriculum construction is further complicated by the fact that the attempt to develop desired behavior components always gives by-products—sometimes quite important, sometimes quite undesirable. To this sort of outcome of instruction or learning Kilpatrick applied the term *concomitant outcomes*. Perhaps they are more the result of the methods of instruction than of the content, but it is hard to draw the line, and it is clear that some grow directly out of content.

A child's attitudes toward school, toward authority, toward learning in general, toward himself, toward his parents, and toward his classmates are usually influenced by the degree to which he finds the curriculum or parts of it interesting and apparently useful, and himself capable of mastering it. His interests in various fields of learning or vocations are undoubtedly affected by his experiences with school subjects as they are taught.

Those who are familiar with child guidance, mental hygiene, and problem boys and girls are well aware of this phenomenon and can cite impressive instances in which teachers have caused the development of most powerful growths in personality—some of them malignant and systematic, some of them fortunately wholesome as well as pervading. Very often the concomitant or by-product outcome is much more important than the growth actually intended as a direct result of the learning activities.

This is particularly important in the use of incentives in instruction. Learning activities which appeal to the child as pleasure-giving or otherwise worth doing result in favorable attitudes toward everything associated with their learning activities, including the subject, the school, and the teacher. To a much smaller degree learning and instructional activities will result in these favorable attitudes if they appeal to the learner as worth doing for the sake of the resulting learning, even though not pleasurable in themselves.

Less effective in developing favorable attitudes are instruction activities which are both unpleasant and seemingly unlikely to result in worth-while learning. It is important to bear in mind that the learner must not only be convinced that the learning likely to result is worth while to him, but also that it will bring him returns not too far in the future.

Also very important with respect to concomitant learning is the degree to which the learner succeeds in mastering the tasks involved in the learning activities. If he fails consistently or frequently, he is most likely to develop unfavorable attitudes towards the materials, the subject, the schools, and the teacher, and is quite likely to develop a lack of confidence in himself, at least with respect to the particular field of learning.

5. Coordination of Curriculum with Other Factors Influencing Growth

The teacher, as well as other curriculum-makers, should bear in mind at all times that the effect produced upon the child is the result of a considerable number of factors, of which the curriculum is only one. The direct effect is the resultant of a number of component forces, one of which is the curricular materials.

Among the other environmental components may be mentioned the following:

1. The previously acquired background of the learner:
   - (a) Vocabulary
   - (b) Interests
   - (c) General information
   - (d) Background in the particular field
   - (e) Out-of-school experience
   - (f) Attitudes
2. The home background of the learner:
   - (a) Interests and attitudes of the parents
   - (b) Opportunities for study—physical aspects, books and periodicals, assistance of parents
3. The effects upon growth of:
   - (a) Radio
   - (b) "Movies"
   - (c) Newspapers and periodicals
   - (d) Library
   - (e) Companions
   - (f) Work experience
   - (g) Contacts with adults

The instruction cannot be planned except in view of, and in adjustment to, the forces which influence the individual's growth, any more than it can afford to ignore the hereditary factors in growth. The school is indeed a supplementary institution. This fact has important implications for the teacher and for his functional activities which should be mentioned at this point.

The Supplementary Nature of School Instruction.—By reason of its supplementary character the school must keep in at least fair adjustment to the rest of the learner's environment.

1. The specifications for the desired product of the schools must be drawn in the light of the conditions and demands of society as the learner will find it, including conditions in contemporary society which call for compensatory or corrective education.
2. When some other social institution or area of the learner's environment no longer influences growth towards the objective of education as it did formerly, the school must follow one of three alternatives. It must (a) re-educate the particular social institution or some other agency to take over and serve as a replacement, (b) allow the particular educational service to go unperformed, or (c) adapt the school program so as to assume the particular function no longer operative.
3. When the educative influences of out-of-school experiences duplicate those of the school, the school should (a) determine the degree to which certain instructional activities are no longer necessary and (b) adapt instruction so as to eliminate superfluous activities.

In another chapter will be found a discussion of important changes in American society to which the school must adjust itself. No more will be said on the subject at this point other than to point out two very important facts:

1. The course of study maker and the teacher must possess a workable orientation with respect to American life, its conditions, its problems, its currents and changes, and they must be able to evaluate American life in terms of the changing demands which it makes upon education.
2. The course of study maker and the teacher must visualize accurately the other components of human growth—the influences of home, church, the press, commercial entertainment, the radio, industry and social companions upon the development of information, skills, habits, concepts, ideals, and attitudes.

The Curriculum and Changing American Life.—It is unfortunate that careful research and the ingenuity of the best minds cannot develop a perfect or even near-perfect curriculum once for all. The bases upon which instructional programs and activities must be built are in a constant state of change. In the first place the pattern of responsibility of the school changes from time to time. With changes in the home, in modes of amusement, in national and international problems, in vocational life, and in numerous other areas, the responsibility of the school for education, for vocation, for intelligent citizenship, for home membership, for recreation, and for other things increases or decreases. Changes are likewise required in the nature of school education itself.

It follows naturally that if school instruction is to remain in anything like adequate adjustment to the needs and conditions of American society as the learner will find it and to the learner's needs and responsibilities as he will find them in that society, teachers, textbook writers, and other curriculum-makers must be in touch with American society—its institutions, its problems, its trends, and the implications of all these for the curriculum. It is also a logical corollary that the curriculum should be regarded as a growing, living thing which in all probability is at least a few steps behind. As a matter of fact the lag of the curriculum behind conditions and requirements of the times is in many respects a matter of decades rather than of years.

The Curriculum and Changes in Pupils.—Not sufficiently recognized is the fact that the interests of young people of any given age also change with the passage of years. Their customs, what they read, what they like to do, how they like to play, their attitudes toward parents and teachers—all these and many other characteristics of youth important in the adjustment of curriculum to the individual are matters that do not stay put—as textbook writers and publishers and the more discerning teachers and principals have learned.

Not only do young people change as a whole, but the nature of young people attending school has changed most significantly in recent decades as the result of the greatly increased number of young people attending high school. The high school student body of today is not actually "selected" on any basis—neither intelligence, nor interest, nor economic status of parents, nor future vocational needs, nor personal economic status. They are in fact representative of all young people and thus constitute a cross-section of American adults ten years hence, living on all levels and in all manners and following all vocations that will be represented in American society.

Significant Variation of Individual Responses.—It has been noted that education is an individual matter. The growth of a group of individuals may be stimulated or guided by a common stimulus—a book, a lecture, or a picture—but it is not the group that grows, it is the separate individuals who compose the group. There are as many separate and different growth results as there are individuals within the group. From reading a passage from *Julius Caesar*, one individual may develop an interest in Shakespeare and a confidence in school and the teacher, while another pupil may develop a prejudice against Shakespeare, an increased dislike for school, and an increased lack of confidence in the teacher. Still another may develop an appreciation of Shakespeare, a respect for the teacher, and a lack of confidence in himself.

One is reminded of an experiment in chemistry employing a rack of test-tubes containing different liquids and a beaker with still another liquid. Upon being mixed with some of the fluid in the beaker, the liquid in one test-tube will turn brown, in another green, in another black, and so on. What transpires in a child's mind, and indeed in his nervous system, is a matter both of the outside stimulus and the inside apperceptive mass. Therefore it is necessary not only to offer different subjects but also to lead the children in one class learning one subject to do, read, say, think, and feel different things. The curriculum must be flexible enough to provide for this.

Until recently, the principal tendencies in the matter of adapting to the variations that exist among individuals have been toward multiplying subjects and toward differentiation of pupil groups according to differences in needs, interests, abilities, and industry. Today the tendency is in another direction—that of adaption to the individual within the class.

This is true of required classes in academic subjects and also of elective classes in vocational training. School people have become aware of the fact that of the vocations for which specific vocational education can be provided a great many, employing a majority of the population, require no more specific vocational training than may be obtained on the job in a few weeks or months. It has become apparent that, whether sections for instruction are formed on the basis of general mental ability, of probable need, or of any other criterion, there will always remain a wide variety among the abilities, capacities, interests, present needs, future needs, and experiential background of the individuals who compose the section.

The Consequent Responsibility of the Teacher.—Because of these ever-present significant variations, courses of study must always be regarded as flexible, tentative outlines. It is well to have courses of study, as it is often well to have textbooks, but in practice they must be adapted to the individuals in the class. This of course is largely the responsibility of the teacher.

It is the teacher's responsibility to bring the pupil into contact with problems and challenges which will facilitate the exploration of his interests. It is the teacher's responsibility to bring the pupil into contact with things to do, to read, to say, to make, to hear, to feel, to see, and to challenge, and thereby to insure future behavior which will be desirable in terms of the objectives of education and of the potentialities of the individual. This of course calls for a fund of knowledge on the part of the teacher about the individual pupils. The teacher should have convenient access to pertinent data on the pupil's special interests, vocational, recreational and social; on the expanse of his vocabularies, especially his listening and reading vocabularies; on his general intellectual ability; on his special aptitudes, mechanical, musical, and the like; on his occupational, vocational, and domestic experience; on his stock of schoolbook information, the areas of his maladjustment, if any, and his most pronounced attitudes, ideals, and prejudices. (See Chapter 19, section 3.)

It is upon all these types of background of the individual learner, and more, that experience is projected for interpretation. The degree and nature of effects of experience upon the growth and future conduct of the learner are conditioned by his background. With respect to many of these items, the majority of learners of a given school grade or section may be relatively homogeneous, but there are always significant deviations. Because of these deviations, principals, supervisors, and teachers are, to a far greater extent than formerly, systematically gathering and recording data concerning pupils. Whereas formerly the data were not made available, at least not conveniently available, to teachers, in many schools today it is for the teacher's use that such data are gathered. Naturally, an alert teacher who has trained himself will soon come to note and carry in mind many impressions and facts concerning each learner. He should not only be on the lookout for these and be constantly thinking of ways to adapt the curriculum to the individual, but he should record his data for future use by himself and other teachers.

The Curriculum and Methods.—While it is serviceable for the purposes of discussion to differentiate between curriculum and methods, it should be recognized that they are inseparably interrelated and are associated parts of the educational environment of learners in school.[5] While methods may be thought of as the procedure of bringing the learner into contact with the stimuli to experiences which will result in influencing his growth, one must not lose sight of the fact that methods are also stimuli or important parts of stimuli.

It should be clear that pupil growth is determined both in nature and amount by the method of bringing learners into contact with subject matter or other learning materials. What happens to the learner educationally is determined in part, and often in large part, by such aspects of methods as:

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[5] See Chapter 15, "Selecting and Organizing Learning Materials."

1. The degree of adequate adaptation of assignments to the maturity, interests, and background of the learner and the objectives of the unit and subject of instruction
2. The nature of questions and questioning evaluated in the light of their adaptation to the interests, abilities, and backgrounds of the learner and the objectives and sequence of the unit and subject of instruction
3. The opportunity provided for initiative, planning, and responsibility on the learner's part
4. The definite efforts of the instructor to emphasize ideals, attitudes, tests, judgments, and understanding as contrasted with factual knowledge and subject skills
5. The evaluation techniques of the teacher and the consequent relative emphasis upon such things as those mentioned in the preceding sentence
6. The opportunities provided for such experiences as applying principles to life, projects and other "doing" activities, group cooperation, discussion, and community participation
7. The manner of speech and other aspects of personality of the teacher

While the opportunities for writing method into textbooks and courses of study are limited, the final determiner of the curriculum is the teacher and he should not fail to recognize his responsibility for providing the most effective school environment for growth toward the objectives of education.

QUESTIONS, EXERCISES, AND PROBLEMS

1. To what extent in your opinion do teachers think of education as assisting young people to be happy, useful, healthful citizens and parents? Give examples for your answer.
2. Be able to give a five-minute talk on the significance of the relatively long period of infancy in the human species.
3. Make a list of ten areas of growth which are controlled largely by heredity, and ten which are controlled largely by environment.
4. Make a list of a few ways in which one learns or grows which are determined largely by out-of-school or preschool experience.
5. Be prepared to give a five-minute talk on "The Teacher as a Determiner of Growth."
6. Write in your own words your idea of the objectives of education.

7. List three specific examples of each of the ten types of educational outcomes.
8. For one of the objectives of education list at least one of each of the ten types of educational outcomes.
9. What are concomitant outcomes? Give several examples. What is their relative importance in later life?
10. What, if anything, do you think the school can and should do relative to out-of-school environmental influences upon the child?
11. Be able to give a five-minute talk on "The Curriculum and Changing American Life," considering the inferences to be drawn from the material of this chapter.
12. Why do individuals respond differently to the same subject matter in instruction? What can, or should, the teacher do in regard to these differences?

Chapter 4

BASIC PRINCIPLES OF LEARNING, TEACHING, AND MOTIVATION

1. PRINCIPLES OF LEARNING

The Laws of Learning.—Over a period of more than half a century, various students of learning have attempted to discover and state the "laws of learning." Nothing like common agreement has been obtained upon any one statement of a set of such laws, though in almost every instance it is obvious that the so-called "laws" do express the operation of principles which are real and effective—which condition learning.

That no final acceptable statement has yet been made may be attributed to a number of causes. In the first place, instead of *learning,* there exist *learnings:* and these learnings, e.g., the learning of facts, the learning of skills and the learning of ideals, are not all of the same type with respect to nature and phenomena. They do not take place in exactly the same manner, and consequently there is no set of laws which underlie all types and operate in the same manner with respect to all. Secondly, it is quite difficult to differentiate completely one from another all of the various operative principles of learning. They seem to overlap somewhat.

On the following pages, no attempt will be made to set forth, or to defend a consistent, complete system of laws of learning. Instead, the effort will be made to describe briefly the most important principles which a successful teacher must observe in theory or in practice and preferably in both. The teacher who understands the nature, the importance, and the more important implications of these laws will not only understand and better evaluate suggestions for teaching procedures, but, if possessed with at least average capacity for creativeness and imagination, will be able to plan the details of teaching procedures fairly well for himself.

The Principle of Activity, Use, Frequency, Exercise, or Repetition.—It is axiomatic that one learns only by some activity that goes on in his neural system: seeing, hearing, smelling, feeling, thinking, physical or motor activity, or some other kind of activity. The learner must be active in some way with respect to what is to be "learned," whether it be information, a skill, an understanding, a habit, an ideal, an attitude, an interest, or the nature of a task. Sometimes being "active" no more than once produces a modification of the individual of such a nature as to result in a desired degree of learning of more or less permanency. An individual may never forget a certain happening or some aspect of it. Ordinarily, however, the activity must be repeated if the desired learning is to be achieved.

Other factors being equal or inoperative, learning is in proportion to the frequency of the repetition of the activity. Other factors —interest, vividness, attention, effect of the activity, interval between repetitions, readiness for the activity, and background of the learner—are, however, rarely if ever equal or inoperative. Mere repetition, if conducted under unfavorable conditions, may not result in learning what is desired. It may in fact result in learning other things not desired: there may be concomitant undesirable outcomes or misunderstandings. For some reason repetition, if it takes place under favorable conditions, tends to result in more permanent learning in the fields of skills and habits than in the fields of information and memory in general.

The learning effects of repetition are conditioned by the spacing of the repeated operations, though no general rule can be stated. In learning to spell a long word, to operate a complicated machine, or to type, one repetition a day is usually not effective. At that rate one forgets between repetitions all or practically all one learns from one repetition. On the other hand, continued repetitions in immediate succession in many situations reach the stage where further repetition at the time yields no learning dividends because of fatigue, loss of interest or attention, or other reasons, some of which we are not able easily to identify.

The Principles of Recency, Disuse, and Relearning.—What one forgets, how quickly, and how completely, depends upon so many factors that it is not possible to predict exactly the effects of forgetting. It is obvious, however, that what one has learned but has not used or recalled for some time is for the time less well learned. If a fact is well learned, one may not be able to recall it at all after a period of disuse, depending among other things upon the period of disuse, the degree of overlearning, and the interest of the learner in it. Skills and habits, particularly motor skills and habits, do not fade nearly as quickly nor as completely as facts. To a lesser degree, the learning of attitudes and interests likewise persists longer than the learning of facts. It is surprising how a telephone number or a street address, one's own for example, which was once well learned, may escape recall after a year or two, while the skills involved in riding a bicycle, playing a piano, or rowing a boat will persist in considerable degree until the general physical deterioration of old age sets in. The necessity of use to prevent forgetting suggests cumulative reviews and programs of maintenance of important facts, principles, interests, skills, and habits.

Ordinarily, however, relearning requires less time and effort than original learning. Quite frequently when it is necessary to relearn, e.g., to restore a skill or knowledge in a certain field to a former level, the saving is often as much as three-fourths or more in terms of time. This is especially true in the field of skills. Usually it is much less than a third or a half when the learning has to do with verbal memory. The greater the learner's understanding and meaning for him of the subject matter, the greater the saving in relearning.

The Principle of Effect, Satisfaction, or Annoyance.—The immediate effect of any activity upon the future activity of an organism is conditioned by the immediate effect of the activity in terms of the richness of the experience. One remembers best those experiences which were particularly painful or particularly pleasurable. One tends to avoid repeating an activity which is likely to cause a repetition of unpleasant experience. "The burnt child dreads the fire," and he remembers well the pain of the burn. Likewise an individual is prone to remember a humiliating experience, though one may forget what one was trying to learn when the humiliating experience occurred.

The results of many experiments performed with a view to discovering how far the effects of learning activities influence learning seem to indicate clearly that rewards and punishments are effective and that naturally pleasant and unpleasant effects condition learning. However, the principle of effect operates unevenly and is influenced in its operation by other principles. It is clear too that the by-products or concomitant effects of the use of artificial rewards and punishments are often very undesirable and more than offset the value of the learning. Perhaps one of the most desirable and powerful types of pleasurable effects is the knowledge of progress or achievement or praise discreetly bestowed.

The immediate effect of a learning activity, e.g., whether it is pleasurable or otherwise, is dependent to a considerable extent upon whether there is mind set, purposiveness, or consciousness of meaningful relationships. If to participate in a certain learning activity, for example, forces one to cease effort in an area or in a direction in which one is interested before one is ready to desist, it is most likely to produce irritation or resentfulness, at least at first. If the learning activity fits in with activities in which one is interestingly engaged, or seems to contribute to a purpose which is in the mind of the learner, the effect is pleasurable and therefore favorable to learning.

Knowledge of Success and Failure.—Many investigators have been concerned with the purpose of discovering the nature and amount of effect upon learning efficiency of knowledge of the degree of success and failure. The results of their experiments are not entirely consistent and are difficult to interpret. It seems clear, however, that in the first stages of learning the majority of learners, especially young learners, are more effectively influenced by commendation than by condemnation. Continued scolding usually has a negative effect.

One must remember that individuals respond differently to adverse criticism and to praise. Criticism is relatively more effective with capable learners and with confident extrovert learners, frequently more so than too much praise. Criticism, except of the most friendly sort, is likely to do more harm than good with less capable learners of the introvert type. In general, teachers who frequently give mild encouragement mixed occasionally with a mild, friendly, and frank type of criticism, are more effective than teachers who are ever critical or lavishly commendatory or who vacillate from severe criticism to extreme praise.

Principle of Association.—Since the time of Aristotle the principle of association in learning has been recognized as important. In the eighteenth and nineteenth centuries, the English Associationists, who constituted an important school of thought in psychology, centered their attention upon theories or philosophies of learning based upon the phenomenon of association. They believed that ideas which can be associated in the mind with other ideas tend to be recalled more readily than ideas not so associated. When one of a pair or group of ideas is recalled, the other or others tend to be recalled also. The more associations a particular idea forms in the mind of the learner, the more readily it is recalled.

Several types of association should be recognized, including association in time, contiguity in space, and contiguity of meaning. If two or more experiences occur at the same time or are in consciousness at the same time, the subsequent presence of one in mind tends to bring into consciousness the other or others. Likewise ideas which have been in the mind of the learner, associated as to their place in space, develop the property of association so that the recall of one tends to bring the other into consciousness. Thirdly, ideas which are associated in meaning in the mind of the learner develop a tendency to be tied to each other in future consciousness. A special and important type of this principle is the principle of sequence. When one idea, feeling, or act has occurred in the experience of an individual immediately preceding another idea, feeling, or act, the recurrence of the former tends to cause the recurrence of the other. The applications of this principle in learning are varied and widespread, being operative especially in learning which involves sequence in the formation of habits, the development of skills, and memorizing.

The implications of this principle for learning and teaching are many and of great importance. Experiences which should occur together, or in sequence, in future thought, action, or feeling, should be experienced together or in sequence in learning. By so arranging the learner's experiences one may go far in conditioning future experience. The applications are not confined to the areas of skills, habits, or ideas, but are found also in the area of emotional reactions. It is not only possible but unavoidable that a feeling of sadness, anger, humor, reverence, joy, or duty shall be so conditioned that it will recur when an experience recurs which has been previously associated with the same feeling. One may be conditioned to feel sad in a certain house, to feel reverent in the presence of a cathedral, to feel inferior in the presence of a certain person or situation, to feel belligerent when a certain idea, e.g., fascism, is mentioned, to feel admiration when strength is exhibited, to feel friendly toward a given word, idea, or type of person, and to feel afraid in the presence of a snake, a large body of water, or of a certain type of responsibility in connection with which one has previously felt unsuccessful or unhappy.

For teaching, one of the more important implications of the principle of association is that what one wishes the student to retain, subject to ready recall, should be associated with a variety of other things, particularly with needs and applications of what is being learned. This phase of learning is important in transfer of training, discussed later in this chapter. The degree and certainty of "transfer" is proportional to the number and strength of associations between the situation first experienced and the situation to which transfer is to take place.

It is also a matter of common observation that an important factor in retention is meaning or understanding. The better a passage, a skill, a definition, or the basis for appreciation of an experience is understood, the more quickly learning will reach the state of mastery and the more recallable and lasting it will be. The relative inefficiency of learning and teaching in schools of previous generations was a natural consequence of the attempt to "learn" without understanding. The expenditure of time in teaching for understanding is usually, particularly where permanence is desired, economical of time and effort in the long run. "The longest way round is the shortest way home" in many instances.

Phases and applications of the principle of association may be seen in such schools of thought in educational psychology as the "organismic," with its "field property," and the "integration" or "unity" idea and movement. Learning things in relation to each other and in relation to some fundamental unifying principle is not the same as learning things separately. Ideas, facts, or actions experienced in association are not the same as the identical ideas, facts, and actions experienced individually. There are meanings, new ideas, new facts, new actions, which are not in any one or in the sum of the individual ideas, facts, and actions, but which grow out of and upon the relationships of the components. There are events and movements in history, attitudes and actions of peoples, scientific phenomena and other things worth learning which are the outgrowth of combinations of facts, ideas, chemicals, and so forth and which cannot be explained or understood from experience of any one component of the combination. The components must be associated, often in a particular way, to produce the resultant which is worthy of learning. Conversely, when a complex learning situation is analyzed and experienced one step at a time, great care must be taken that relationships and properties of the complex whole are not lost sight of. Otherwise, most important things may escape learning.

Perhaps none of us is without several experiences which demonstrate this principle in a humorous way. When one is expecting a telephone call, he may answer the telephone when the doorbell rings. A friend's remarks may be ridiculously misunderstood because we were expecting something different from what the friend actually said. To some extent, one experiences what one expects to experience—sees what he is looking for even if it is not really there to see.

The current emotional set or mood also determines, to some extent in most instances and to a great extent in some, how a learner will react to teaching and to learning activities and materials. It goes without saying that if the learner is at the time optimistic, critical, weary, enthusiastic about something else, worried, happy, or depressed, what he learns will be associated with his mood when he learned it. It is difficult to make any adequate adjustment to the varying moods and mind sets of each of a number of individuals in a class. Nevertheless, a teacher should realize that these factors condition learning.

The Principle of Apperception, of Mind and Emotional Set.—The learning effects of any given instruction upon any given individual vary with the individual's mental background at the time, regardless of his previous mental content. By *mind set* is meant the degree of absorption of the mind at any particular moment and the content of consciousness at that time—the ideas, thoughts and purposes of the moment. Samuel Chester Parker, noted authority of a generation ago in methods of teaching, cites an example of this principle from his own experience:

> I was riding in a train and happened to look over the shoulder of the man in front of me at the newspaper which he was reading. I could just see the top of the paper and read there the following large headline, extending clear across the page:
>
> GOOD HATS A QUARTER
>
> Inasmuch as I always take advantage of end-of-the-season reduction sales of men's furnishings, this statement interested me (although good hats for a quarter seemed impossible), and I decided to look into the matter further when I got a chance. Soon the man left his seat to go into the smoking car. I picked up his paper and, turning to the desired page, found that instead of reading
>
> GOOD HATS A QUARTER
>
> the headline read
>
> GOD HATES A QUITTER
>
> It was Monday morning, and the paper in question contained reports of Sunday sermons printed with large-type headlines running clear across the page. If I had been in the religious frame of mind at the time, instead of the bargain-hunting frame of mind, I might have read the headline correctly at the first glance.

The number is legion of schoolboy howlers or boners which result from the natural tendency to interpret what one experiences in the light of previous experience, e.g.: "I shall come from Joisy, bring in de cheese" for "I shall come rejoicing bringing in the sheaves"; "the corset crated cross-eyed bear" for "the consecrated cross I bear"; "he did it in a half-hazzard manner" for "he did it in a haphazard manner."

Many suggestions for making teaching effective grow out of this principle of apperception, which possesses great validity and under-spread application. Explanations must be made in the light of the background vocabulary and previous experience of the learner. Care must often be taken (a) to fill in gaps with necessary background for understanding new materials, sometimes in the form of a review, (b) to put learners in an appropriate frame of mind for many new ideas or learning activities—perhaps sometimes by developing interest or a desire to learn, sometimes by explaining the purpose of the learning activity.

Often the failure to utilize this principle occurs not because the teacher does not realize its importance but because he does not know the background, previous experience, interests, and present frame of mind of the pupil. The teacher is usually prone to overrate the pupil in this respect and to presuppose a background which exists only to a very limited extent if at all. To be most effective, teachers should acquire as much knowledge as possible about students in their classes [1] by means of interest and experience inventories, vocabulary tests, and other exploratory devices, employed at the beginning of a year or at the beginning of a unit of instruction.[2]

The principle of "mind set" also operates to condition the nature of the effect of any learning activity or the suggestion to a learner that he engage in a given activity. When there is present in the mind of a prospective learner a purpose upon the accomplishment of which he is intent, an interruption is very likely to be resented. When Harry is intent upon reading a newspaper, playing a game, or even perhaps working a problem in algebra, an interruption in the form of a suggestion to quit and read a magazine, go to assembly, or translate French is likely to be unwelcome. Unless the suggested activity is one which keenly interests or immediately excites him, the effect upon him is much more likely to be one of annoyance than of pleasure. The more absorbing and pleasurable the activity in which he is engaged, on which he has a particular mind set, the more he dislikes interruption.

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[1] See Chapter 19.

[2] Henry C. Morrison describes a good technique involving a pretest for this purpose in *The Practice of Teaching in the Secondary Schools*, pp. 223-226 and 232-243.

At least three important general principles of teaching seem to grow obviously out of this principle of learning: (1) the approach to new learning activities should be made in such a manner as to utilize previous mind sets; (2) quite frequently time and care must be devoted to setting the stage by reviews, discussions, lecturing, and so forth to prepare the learner for coming learning experiences; and (3) the probable effect of any learning stimulus, materials, methods, or activities upon the learner must be considered in the light of what he already knows or does not know, his interests, abilities, concepts, and tastes.

Certainly more specific principles of teaching procedure have their source of validity, at least in part, in this principle of learning. Among them may be mentioned the following:

1. Proceed from the simple to the complex.
2. Proceed from the concrete to the abstract.
3. Proceed from the near to the remote.
4. Proceed from the fundamental to the accessory.
5. Proceed from the psychological to the logical.

The reader is invited at this point to think of at least one example showing how each of these principles may be utilized to advantage in a field in which he expects to teach.

The Principle of Readiness.—Naturally one of the more important considerations in directing learning is that of the learner's readiness. Algebra can be taught with some degree of success to an average child in the fifth grade, but with great difficulty and uneconomical expenditure of time, as is true of the attempt to teach reading to learners aged 3 or 4. It may be stated as a general rule that whatever may be postponed until later will be learned more easily, provided that the learner in the meantime is growing through learning. Naturally, not everything can be postponed; even if it could, valuable opportunities for learning would not be fully utilized. Something must be taught each year. It is a matter of relative readiness. Until a decade or so ago, there was a tendency to force learning materials earlier and earlier in the life of the child. Long division, for example, which had once been taught in high school, was introduced in many schools as low as the fourth grade. The result was not only uneconomical learning but the development of undesirable attitudes in the relatively unsuccessful child and misconceptions of his own capacity for learning mathematics.

In recent years, with a growing understanding of child psychology and a growing realization of the folly of crowding nature too much, there has been a greatly increased attention to the matter of readiness and an increased recognition of the value of a greater experiential background upon which instruction may be based. As a result, there has been a tendency to relocate many items of instruction in later grades, particularly in the subjects of reading, mathematics, grammar, history, and literature. There have been many attempts to discover at what grade, in accordance with the principle of readiness, the various topics or phases of topics of courses of study should be taught. Many investigators have entertained the hypothesis that, just as in the maturation of a chick there comes a time when it learns most naturally and economically to peck for food, so in the life of a child there is probably the time of golden opportunity, if one could locate it, when each of the various more important things to be learned could be best taught. Up to the present, no means have been discovered whereby we may identify the "golden age." We have, nevertheless, learned that some ages are better than others for some things and this approach to the improvement of instruction is still under way.

More intensive study of this principle seems to reveal, among other things, that (1) it is not practical to attempt to force nature too fast in developing understandings, interests, ideas, or skills; (2) the optimum time for teaching various items is conditioned not only by the maturation and growing background of the learner, but by his developing and changing interests and his growing needs for the outcomes in question; (3) the decision must be made on the basis of a consideration of various factors, including (a) the necessity for learning much before leaving school and (b) the necessity for learning something early as a basis and background for understanding and learning other things; (4) with few exceptions, there is no very special time at which the human is "ready" for any particular subject matter; it is a matter of adapting the instruction to the learner's degree of readiness both in terms of basis for understanding and in terms of his interests and needs.

The Principle of Interest, Effort, Attention, Vividness, Intensity.—It has long been observed that the contribution of repetition to learning is not only a matter of frequency but also of other factors, including the attitude of the learner and his ability to attach meaning to the materials. Perfunctory drill or repetition is relatively ineffective, as is reading passages with a low level of attention and interest. Experimenters have discovered that repeating materials for the subjects of the experiment to learn does not always result in any appreciable degree of learning. It seems clear that learning is dependent largely, in addition to accurate repetition, upon a type of experience in which there is a high level of attention and in which there is upon the learner's part an interest in the learning activity and an interest in achievement of learning. Learning is achieved most quickly and completely when the learner is an *active* and a *willing* participant in learning activity.

Many experiences are retained indefinitely even though there was no repetition. In this category are experiences of unusual intensity or meaning to the individual. One rarely forgets the sight of a dying person, a violent storm, a very humiliating incident, a most eagerly sought reward or victory. One also tends to remember longer his more vivid learning experiences of a less spectacular nature—the visualized, concreted, colorful, more or less dramatic and lifelike ones.

Because of the prime importance of this principle and because of the difficulty in obtaining a high level of interest, attention, and active participation among learners for what we try to teach in school, a later section of this chapter will be devoted to discussion of the approaches to motivation, interest, and attention.

Physiological Factors.—Several physiological factors condition learning to an appreciable extent. Learning declines with fatigue, but physical fatigue must be of a very marked degree before it in itself interferes seriously with learning. Ordinarily, fatigue affects learning principally by interfering with or dividing attention or is of the nature of mental fatigue, ennui, or boredom. It tends to interfere more with the acquisition of understanding than with rote memory, more with acquisition of complex and fine skills than with habits.

Pain tends to interfere with learning much in the same manner as does fatigue, serving to distract attention rather than to prevent learning if attention can be maintained. Drugs have various effects upon learning, most of them inimical or negligible. Some drugs serve to produce wakefulness or alertness for a time and to that extent contribute to learning.

Learning is materially conditioned by the general physiological condition of the individual. Individuals with nutritional defects, with chronic fevers or with systemic infections of any sort, with very low blood pressure, or with glandular malperformance are almost certain to be handicapped in learning. Such effects are noticeable not only in individuals, but in regions where these physiological maladjustments are common.

Learning and Intelligence.—What one can learn and the rapidity of learning are very much dependent upon the capacity of the individual for learning—apparently upon the composition and modifiability of the cortex and the nervous system. This capacity is not greatly dependent upon race or sex. A teacher should learn the limits set by heredity for each of the individuals in each of his classes (I.Q.) and the stage of mental maturity or ability (M.A.) and adapt teaching materials and methods accordingly.

For the slow or dull learner there must be concrete, sensory, lifelike, simple, practical materials and activities; for the bright pupil there must be challenges in the form of complex abstract materials and materials and methods calling for ingenuity, generalization, and creativeness. (For more detailed discussion see Chapter 19, "Adapting Instruction to the Individual.")

The Phenomena of Transfer of Training and Formal Discipline.—Learning outcomes achieved in a specialized situation or restricted field may function under certain conditions in other specialized situations or restricted fields, or in all fields. Ability to speak English correctly is of considerable assistance in learning to speak German or any other language. Ideals of honesty and honest behavior developed in the classrooms tend to carry over to extra-classroom life. However, neatness developed in arithmetic may be expected to carry over to neatness in person or in room very little if at all, primarily because neatness in person and neatness in arithmetic, though both referred to as *neatness,* are very largely two different things. The degree of carryover or transfer is known to depend upon certain principles which may be stated as follows:

1. The degree to which there is identity or similarity between the training situation (stimulus-response) and the field or situation to which transfer is made as to (a) content: ideas, facts, principles, concepts, vocabulary; and (b) procedure: of study, of action
2. The degree of general intelligence and imagination of the learner which will enable and cause him to recognize that the effects of training in a previous situation or situations apply to various new situations to think in a given new situation of the possibilities that might be employed
3. The degree and extent to which in the original training a general ideal was held before the learner, e.g., the ideal of neatness, or the extent of the possible areas to which transfer could be made was emphasized, e.g., the transfer in the study of French of ideas of grammar or of vocabulary to English grammar or vocabulary

It is of the greatest importance that teachers be constantly alert to the possibilities and point out the more useful applications or "transfers" of what is learned to areas or situations in which specific training for reasons of lack of time or equipment could not be given.

2. INTEREST, ATTENTION, EFFORT, MOTIVATION

It is one of the most important and fundamental responsibilities of the teacher to see to it that the pupils for whom he is responsible engage in appropriate learning activities with sufficient ardor and with sufficient attention to assure substantial learning progress. The beginning teacher usually learns in the first year of his teaching that young people lack the thirst for learning—at least the type the teacher has for sale—to a degree even more appalling than he had imagined. Largely because of this lack of intellectual appetite, potential problems of discipline exist and being able to maintain discipline or morale is crucial. The best educated and most scholarly people often have very limited success in teaching, because of their inability to motivate learners to engage in the activities necessary for learning.

The most successful teacher is the one who has the knack or the know-how or the personality (usually a combination of all of them) to get young people to do those things which they must do if they are to learn and with a spirit which they must have if they are to learn well. He must be able to put pupils in a frame of mind and to plan learning activities so that they are interesting in themselves, meet specific felt needs of the learners, and are entered upon and continued with vigor because of genuine values rather than artificial incentives such as rivalry, marks, and love of approval.

Evaluation of Incentives to Learning Activities.—The relative value of motives or incentives to learning activities may be judged by the following criteria:

1. *Power of appeal:* the degree to which the incentive stimulates the learner to continued learning activity
2. *Universality of appeal:* the proportion of the learners involved who will be motivated by the incentive or motive
3. *Concomitant educational outcomes:* the nature of the educational effects of the use of the incentive (a) upon the learner's attitude toward and interest in the subject, (b) upon the learner's attitude toward the teacher and the school in general, (c) upon the learner's attitude toward himself and his capacities, and (d) upon the development of social and ethical characteristics

It is a common but unfortunate practice of some teachers, especially beyond the lower grades, to use incentives primarily upon the basis of the first two criteria above and to ignore the third. As an educational policy this is shortsighted, fallacious, and unjustifiable. The practice is followed so generally because so many teachers are willing to sacrifice long-term educational gains in order to meet immediate difficulties by destroying or failing to develop permanent interest.

No matter how effective the use of a given incentive may be (appeal to rivalry, use of honor rolls, threats of failure, for example) as a means of goading young people to do algebra exercises, to study history lessons, or practice typing or piano, it is unwise to employ it, if by so doing the teacher fails to develop an interest in the subject field involved. Indeed it is actually reprehensible to resort to that kind of incentive if it causes the pupil to dislike the subject and to develop attitudes likely to cause him to avoid further study of the subject in after-school life.

A century ago Horace Mann, the great evangelist for public education in New England, wrote the following: "If a teacher desires that his pupil should be a great man rather than a good one, or that he acquire wealth rather than esteem; or that he should master Latin rather than ride his own spirit, or attain high official preferment rather than love the Lord his God with all his heart and his neighbor as himself—then he will goad him on by the deep driven spur of emulation or any other motive until he will outstrip his fellow, at whatever peril to his moral nature."

G. Stanley Hall, the great pioneer student of adolescence wrote: "The opposite extreme is the fastidious and superficial motivation which can only tattoo the mind and body with conventional patterns pricked in, but which lead an unreal life in the soul because they have no depth of soil in nature or heredity."

It is not difficult to appreciate the observation of a parent who protested, "Even if my son did make a B in that teacher's course, I would have preferred that he not have studied under her at all. What little scientific information and jargon he learned, he will soon forget, and certainly it is poor return for the distaste which her teaching developed in him for science."

The practices of teachers who use general artificial devices for stimulating learning activities possess other objectionable qualities. They constitute very definite incentives for young people to study for these artificial rewards rather than for educational growth itself. They fail to lead children toward intellectual interests and contribute to the tendency of young people to cease to study when the artificial pressures are removed. In addition, the power of the artificial devices, like those of drugs, diminishes with continued use.

Many of these artificial incentives breed undesirable character traits such as conceit on the part of the brightest and despair on the part of the least able, overdeveloped appetite for competition and for winning, destruction of the tendency to work with and for others as opposed to working against others, and a willingness to cheat, to use various devices to mislead teachers, and to "learn" only what will be checked up on.

Some incentives commonly employed have much power but apply to a small minority of a group of learners. Honors and distinctions do not apply to all of the superior students and have little appeal to the student who realizes that his chance of attaining the honors or distinctions is negligible. The possibility of failure is of little motivating value to students who with a little effort can be certain of passing.

Some incentives appeal to all or nearly all students but do not appeal in a manner likely to result in vigorous learning activity. In this category may be placed the desire to be a good citizen or to be of service to humanity, to be a learned rather than an ignorant person, to be a success in life, and many others which are too general or remote to stimulate immediate learning.

Types of Interest, Attention, and Needs.—As John Dewey pointed out so clearly in 1913,[3] attention is essential for economical learning and it is directly dependent upon and grows out of interest. Where interest is lacking, learning activity goes on under the handicap of divided attention and mental activity. "External mechanical attention," as Dewey said, "to a task as a task is inevitably accompanied by random mind-wandering along the lines of the pleasurable. The spontaneous power of the child, his demand for realization of his own impulses, cannot be suppressed." Wherever there is effort to attend, there is an inherent weakness; and while there are occasions when "effort" or the "will" to attend must be resorted to, it should not be overworked, as it so commonly is in classrooms.

Interests are of two kinds, direct (intrinsic) and indirect (mediate). Attention may be spontaneous, growing out of interest, habit, or sensory insistence, or it may be forced by the will or by unwelcome distraction.

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[3] *Interest and Effort in Education.*

Needs may be classified as immediate or deferred, and as intrinsic or mediate. From a mediate need, a need not for the thing itself as a means to an end, indirect interest and forced attention usually follow.

Direct and Indirect Interest.—It is not always easy to distinguish sharply between direct and indirect interest. There are some things that we are interested in doing merely because to do them gives us pleasure. We are interested in these activities because they satisfy predispositions, yearnings, and tastes which may be either inherited or acquired. Examples of direct interests are those commonly exhibited by adolescents in watching athletic contests, in hearing funny stories, in "reading" picture stories (comics), and in playing some forms of game and the interests some individuals have in planting a garden, in drawing, in writing poetry, or in making a stamp collection.

An indirect interest is one such as that in studying because of the need to know something or the desire to make a good mark or not to appear stupid in class. An indirect interest may and often does become a direct interest. Often pupils study because of an indirect interest. With good curricula and a good teacher, these pupils, or many of them at least, should eventually become interested in learning activities. One of the most important functions of all teaching is to develop a variety of keen, desirable interests. Unfortunately most "schoolmarms," male and female, sacrifice interests to the much less valuable outcome of temporary mastery of school subject information or skills.

What Activities Are Interesting?—Most individuals have certain identifiable predispositions. They are like tastes. Some things they just like to do. Most young people like to be physically active, though this desire decreases as they approach maturity. Most young people are curious, particularly about things that are strange. Most young people like contests, particularly group contests. Many other interests common to young people may be identified by the observing teacher.

What is interesting depends upon current value to the learner and to those of his age group at the time. Young people usually like to do what other people of their age are doing and think worth doing. To some extent, varying with different individuals, what is interesting depends also upon what people in general seem to like to do and believe worth doing.

Interests are also individual. What interests one child may not interest another. One enjoys working with wood or metal. Another prefers to talk about airplanes. One likes to play a musical instrument, another to be with a group, another to read stories, and another to cook new dishes. Many teachers began their work not because of their interest in teaching but as a means of livelihood and developed later an interest in teaching for itself.

Attention: Spontaneous or Forced.—One usually gives spontaneous attention to that which is of direct interest to him. No effort of will is required. To those activities which are performed not because of any direct interest but for some ulterior purpose one forces his attention. It is, to be sure, a matter of degree. Some activities are of sufficient direct interest or have become so nearly a matter of habit and routine that little effort is required to pay attention to them. Spontaneous attention is the type one gives also to loud noises, moving objects, and strange sights, which may or may not be pleasurable or even interesting in themselves.

Wherever there is forced attention, the learning situation is not at its best; attention is divided. At least some consideration must be given to the matter of forcing attention, and always there is competition for attention. There is rarely the degree of attention we think of as absorption.

Motivation and Need, Generic and Specific.—While there are those who believe that young people should engage only in activities which are intrinsically interesting, they find it difficult to convince many other interested parties of the wisdom of their position. There is much of value to be learned which, at least at first, must be learned by means of *motivated* activity. The learner must be caused to engage in the activity necessary for learning not because of direct interest but because by so doing he may gain something he wishes or avoid something he does not like. He operates with forced attention from indirect interest and is stimulated by a motive.

To be motivated one must feel a *need*. He must wish something and must feel that to engage in a given activity will enable him to accomplish the satisfaction of that desire. Quite often, in fact almost daily, teachers themselves must develop motivation, either specific or generic. Often a person has need for a particular knowledge or skill for a specific purpose. He may, for example, need to know the location of certain cities to understand the significance of certain current news, to be able to type in order to get a kind of position he desires, to know certain facts in order to operate or to repair a radio or an automobile, to be able to use a certain tool or machine in order to make something he wishes to construct, or to develop skill in speaking or acting in order to make a debate squad or to take part in a play. All of these are specific needs. For the purpose of motivating and developing interest in the performance of learning activities the specific need is of relatively great effectiveness depending upon the keenness with which that need is felt.

There is another type of specific need which plays an important part in the techniques of the best teachers. It is the *felt* need created by bringing pupils to see what are the specific deficiencies in their learning achievements. For this purpose diagnostic tests constructed by the teacher (if not otherwise available in textbooks) should be used frequently and teachers should observe young learners at work for deficiencies. (See Chapters 20, Section 6, for a detailed discussion.)

Generic needs do not ordinarily constitute as powerful a motivating force. Yet appeal to generic need must be made much more frequently because commonly learners will not feel a specific need for the outcomes of the learning activities contemplated or for the activities themselves. Appeal to generic need should, therefore, be made only when there seems to be no intrinsic interest or practical felt need. Generic need is a need for some outcome of learning activity which is not a need for the particular instructional or learning materials, an outcome to which other materials or outcomes will also minister. Of this broad type is the need felt for good marks, for approval, for education or knowledge in general, and for preparation for college. Also included are the needs felt to satisfy the desire for achievement, to help a team, to satisfy a sense of duty, or to avoid criticism. Almost any subject may be motivated by appeal to generic needs.

The appeal to some specific need or needs is to be preferred wherever such a need exists, not only because it is likely to be of greater motivating power and less likely to result in undesirable outcomes, but because it associates the learning materials, activities, and outcomes with their practical applications and thereby provides training in application as well as understanding of the practical significance of the outcomes acquired.

Immediate versus Deferred Needs and Values.—One of the most important characteristics of a need is the proximity of the time when the need will become *immediate*. The degree of motivating power is in proportion to the nearness of the time when what is to be learned will be useful. What is needed today is of much importance. What will be needed next week is less impelling. What is needed next year seems not at all pressing. What will be needed when one is five, ten, or twenty years older may appear to be of great value theoretically, but it is not likely that many young learners will be keenly motivated to study such matters at the present time. They are not likely to be vigorously motivated by learning activities which serve remote needs, in preference to alternative activities which are intrinsically interesting and therefore pleasurable or activities which minister to current or immediate needs.

The successful teacher, while he does not neglect to point out the relationship of learning activities to deferred needs, will not often fail to reveal a need which is intrinsic and immediate and will plan his instruction accordingly.

Positive and Negative Needs and Motivation.—Generic and specific needs seem to fall readily into one or the other of two categories, *positive* and *negative.* Human beings do many things in order to achieve something desired and many other things to avoid something undesirable. A high school boy may practice on his violin because he wishes to be able to perform well on it, or he may practice because his parent or teacher will criticize him if he does not practice. A learner may study a selection in literature because he enjoys it or because he fears being unable to perform satisfactorily when called upon in class.

It must be recognized that often the positive and the negative are different aspects of a single motive. A student may engage in learning activities both because he wishes to excel, or at least to achieve a fair mark, and also because he wishes to avoid appearing inferior or making a low mark. Specific needs, as well as generic needs, may be either positive or negative or both. For example, a student may learn what is involved in making a good table on which to study, or what information is needed to understand certain current news, not only to achieve a desired objective but also to avoid failure in a specific undertaking.

While the degree to which the need appeals to a learner is most important, it is also true that positive incentives or needs are usually more effective than negative incentives or needs. While a slightly attractive reward is less motivating than the prospect of a serious punishment, rewards usually are more effective than punishments. They are on the average not only more effective as motivation, but they are definitely much less likely to possess undesirable concomitant outcomes such as distaste for the subject matter or learning activity, dislike for the school and the teacher, and untoward effects upon personality that result from fear and compulsion through fear. The fact that teachers employ negative incentives does not establish a presumption in their favor but stands as a testimonial to the lack of ingenuity, time, or industry on the teachers' part. Sarcasm, humiliation before classmates, and other punishments are disappearing from practice among the more successful teachers.

Natural versus Artificial Incentives.—Whenever it is necessary to resort to motivation which is of the nature of a reward or a punishment other than the natural outcome of learning, an *artificial incentive* is employed. This is always the case in the appeal to generic need. Artificial incentives are broad in their scope of application in that they appeal to the large majority of learners. They also quite frequently possess considerable motivating power. However, from the point of view of developing permanent interests, effects upon personality and upon pupil-teacher relationship, and other concomitant outcomes, they are most likely to be definitely harmful, and should be employed only in the absence of natural incentives, specific needs, or intrinsic interest which will motivate learning activity sufficiently to result in a high degree of attention.

Distractions.—Earlier in this chapter attention was called to the distracting element in forced attention when an indirect interest is employed. Mind wandering is probably always present to some degree unless the activity itself is satisfying. There are, of course, other types of distractions which should be kept at a minimum during learning activities—competing stimuli and activities, including conversation, physical discomfort, feelings of compulsion, feelings of failure and inadequacy, and the like.

Goals, Objectives and Knowledge of Achievement.—In almost every instance motivation is improved if definite, achievable, and not too remote goals are set up in the mind of the learner. Remote general goals and objectives should whenever possible be broken down into smaller and more immediate goals. Practical goals and objectives of learning activities are abilities to do, abilities to recite, objects or parts of objects made, the solution of problems, the answering of questions, the completion of projects, the attainment of skills or elements of skills, the formation of habits formed and the like. Abilities "to do" include such things as to be able to tell a funny story, to carry on a conversation, and to give directions. Assignments should be formulated in terms of such goals—specific, attainable, and seemingly desirable—not in terms of amounts of materials to be read or of number of repetitions or of general remote goals such as "to be able to speak more effectively," "to understand the history of the American people," or "to appreciate music." These general objectives should not be ignored. The learner should be conscious of them and desirous of attaining them, but they must be broken down into more immediate sub-goals.

Hundreds of experiments have been conducted in efforts to discover the effects upon learning progress, of knowledge of progress or lack of progress. While the results vary, certain general conclusions may be safely drawn. It has been usually found that knowledge of success improves learning more than lack of information concerning progress. It appears that such knowledge is most beneficial when the learner needs encouragement to revive his flagging spirits.

Knowledge of failure seems to have different results upon different individuals and according to circumstances. It seems most likely that discouragement is harmful to many and beneficial only (1) to those who have not made very sincere efforts to learn or (2) when the knowledge of failure is diagnostic and not too discouraging. Knowledge of failure may be helpful in bringing into focus just where the failure is and what has caused it, without giving the individual the impression that greater achievement is impossible for him.

Questions, Problems, and Exercises

1. Different authorities use different terms in speaking of repeated experience as the basis of learning, e.g., *activity, use, frequency, exercise,* and *repetition.* What differences do you see between the meanings of these terms as employed in formulating a fundamental principle of learning?
2. Think of two examples of "learning" more or less permanently a fact or an attitude from one repetition only, and two examples of relative failure to learn after many repetitions. Explain why there was learning or not in each case. What laws or principles were involved in the cases where there was learning?
3. Think of two examples of forgetting from lack of recent repetition—one of a fact or facts and one of a skill. Which tends to be more completely forgotten from disuse?
4. Mention some ways of employing "associations" to insure retention of facts or habits.
5. Be able to give a five-minute discussion of "readiness"—its meaning and application to learning.
6. What are the principal unique or different elements, and what is the common element, in the meanings of *interest, effort, attention,*

vividness, intensive? What is the relation between interest and effort, interest and vividness or intensity, attention and vividness?

7. What are some of the implications for classroom work of the effect of fatigue upon learning? The effect of malnutrition upon learning?
8. Select one high school subject and think of some learning outcomes of that subject which transfer to broad areas in life—outcomes that ordinarily transfer in large amounts. Do any other subjects result in the same transferable outcomes?
9. Mention three methods of getting learners to apply themselves which you think are good and three which you think are bad. Evaluate each on the basis of (1) power of appeal, (2) universality of appeal, and (3) concomitant outcomes.
10. Give two examples each:
    (a) of direct and of indirect interest
    (b) of spontaneous and of forced attention
    (c) of generic and of specific need
    (d) of immediate and of deferred need or value
    (e) of positive and of negative motivation
    (f) of natural and of artificial incentives
11. Discuss the role of goals in learning—the effectiveness of specific goals upon effectiveness of learning activities and the possible effects of knowledge of relative success or failure upon learning.
12. Take one side of the following question and be able to defend it in class. "Forcing young people to perform unpleasant learning activities is desirable educational experience."

Chapter 5

TEACHING FOR DIFFERENT TYPES OF LEARNING OUTCOMES

As suggested in Chapter 3, educational growth may be considered as being of a number of varieties. People may grow educationally by acquiring *information*—specific or general—and with various degrees of understanding. One may grow educationally, for example, by acquiring knowledge of the location of cities, mountains, and rivers, or knowledge of the rules of grammar, mathematics, or science, or knowledge in the form of understandings, i.e., "knowing" in the sense of knowing the significance and characteristics of a person, species, object, process, institution, or idea. One may also grow educationally by acquiring mental skills, motor skills, or habits of thought, feeling, or action.

One also may grow educationally by acquiring *ideals*—desired goals in the form of traits one wishes to acquire or standards one wishes to attain and to support—and by developing *attitudes*—relatively fixed tendencies of emotional reaction to individuals, groups of people, ideas, institutions, social practices, and philosophies. Examples of attitudes are hostility toward a biased press, a favorable attitude toward public education, suspicion toward newspapers or radio commentators, and an attitude of superiority toward people of other color than one's own.

Finally, one may grow by acquiring *interests* in or predispositions toward certain specialized fields of knowledge, certain activities, and individual people, animals, or objects and by acquiring *tastes* —preferences for certain kinds of experiences in reading, hearing, seeing, or doing. For example, one may acquire tastes for certain types of literature, art, music, games, social intercourse, theatrical presentations, or dress and appearance.

In this chapter there will be presented general basic concepts of (1) the relationship of learning and teaching to each of these types of educational growth and (2) the procedure in promoting learning of each of these types. In subsequent chapters, more detailed discussions of techniques of teaching for types of growth will be presented.

1. THE ACQUISITION OF KNOWLEDGE—INFORMATION, CONCEPTS, AND UNDERSTANDING

One may grow educationally by acquiring knowledge (a) in the form of *verbatim statements* as, for example, being able to state that "A sentence is a group of words expressing a complete thought" or to recite a selection from literature or a passage from a book; (b) in the form of the *gist or general idea* of a paragraph or other passage, or of an event, a person, a movement, a process, or some other part of experience which one can state in one's own words; (c) in the form of a *general principle, concept, or rule* which one can state in one's own words or can apply to a given situation, case, or problem. These three types of knowledge vary characteristically with respect to the degree of understanding necessarily involved. Within each of the three categories learnings also differ in the amount and nature of understanding. Reciting verbatim from memory may be achieved with little or no understanding or meaning and frequently is, being accepted as implying understanding and in lieu of more valid evidence of understanding.

Fortunately the tendency in teaching for the past several decades has been to put less emphasis upon verbatim memorizing. It is not only difficult and time-consuming, quickly forgotten, and of little value unless accompanied by a high degree of understanding of the meaning of the words memorized, but there are relatively few statements or passages which there is any real need to memorize verbatim. Little can be gained by reciting a set of words verbatim unless there is understanding of the meaning of the words.

Throughout the nineteenth century, much of the activity of the schoolroom had verbatim or memoriter learning as its main objective. Verbatim recitation was impressive and was commonly accepted as evidence of learning of meaning. This was particularly true in times and among people who were in awe of formal statements, long and unusual words, and bookish materials. Ability in verbatim recitations tended to set its possessor apart. In recent decades there has been a growing tendency to be more concerned with abilities to apply knowledge than with the mere possession of knowledge or what passed for it.

It may be desirable to memorize certain learning materials, e.g., beautiful passages of literature and statements or rules of procedure, the ability to use which depends materially upon recalling exact words and making fine distinctions. Nevertheless, verbatim recitation without rich understanding possesses little utility. Even the ability to use rules and precepts which are employed completely and continually is aided very little by verbatim memorization.

It should be clear that, in studying procedures of teaching for acquisition of knowledge, one must continually be on guard to distinguish learning verbatim or near-verbatim from learning the "gist" or general content and import of information. Many of the conclusions from experimental work in the psychology of learning are based upon experiments involving only verbatim learning, and inferences from these conclusions are subject to so many limitations as to decrease the value of the so-called scientific basic principles of acquiring knowledge.

Authoritative versus Developmental Methods.—Procedures of teaching for the purpose of acquiring information and understanding tend to fall into two general categories: (1) the method of learning accepted facts or conclusions on the basis of assumed competent authority and (2) the method of developing the student's stock of information and understanding by processes of observation and reasoning.

The learning of materials from the printed page or from the spoken words of the teacher, the radio speaker, or other persons constitutes the first type. The second type is represented by procedures in which the learners' efforts are centered upon developing by reasoning of one type or another the information or general principles being learned. These two types of learning and teaching may be designated as the *authoritative* and the *developmental* types of procedure.

The various techniques of teaching do not all fall precisely into one or the other of these two general types. Nevertheless, most techniques tend to be predominantly one or the other. Among those which are largely authoritative are:

1. Learning from textbooks or other references
2. Learning from lectures
3. Learning from visual or other sensory presentation by the teacher
4. Learning from class recitations made by one's self and others

Among those which are predominantly developmental are (1) the *inductive procedure* by which the learner arrives at a general conclusion—for example, a rule for squaring a binomial, the concept of cause and effect or of continuity in history, the causes of war or of depressions, certain laws of physical science—by examining a number of individual cases; (2) the *deductive procedure* by which the learner arrives at an inferred conclusion or solution by reasoning from previously known or given facts or principles—for example, the reason for Russia's attitude of suspicion toward a world association of nations, why more people die today of cancer and heart trouble than formerly, what happens to beef to make it tender, why Missouri had Southern sympathies in the War between the States.

It is evident that often a teaching or learning procedure will be to some extent developmental but not completely or effectively so. For example, a learner or a class may be attempting to derive a general principle or to deduce a specific conclusion and yet receive so much help from the teacher as to make the result at least partly dependent upon "authority." It frequently happens also that, as a teacher is explaining, he so stimulates the learners or at least some of them to think through the matter for themselves as to make the procedure at least partly developmental.

Advantages of Authoritative and Developmental Methods.—On the basis of use, distinct advantages are claimed for both the authoritative and the developmental methods of teaching. The purported values of each method may be summarized as follows:

Advantages of authoritative method:

1. Economy of time.
2. Presentation of subject matter in a logical manner.
3. Requires less ability and ingenuity on the part of the teacher.
4. Definite, formal presentation preferred by many students.
5. Gives students possession of a body of tangible subject matter.
6. Mastery of material presented by authoritative methods can be ascertained by accepted instruments of measurement.
7. Nature and difficulty of the material may justify the direct, authoritative method instead of more time-consuming methods.
8. Retention is facilitated by reference to textbooks or notes on the lecture.

Advantages of developmental method:

1. Concomitant learnings may be highly important outcomes such as (a) pupil initiative, (b) independent habits of study, (c) techniques of problem solving useful in meeting problems outside of school.
2. Self-activity required of learner satisfies conditions of effective learning.
3. Retention can be reinforced by the learner's repeating the developmental process.

4. More complete response of the learner in the initial learning makes it more permanent, thereby reducing need for excessive drill and repetition.
5. The reality and vividness of the pupil's experience in reaching a conclusion or solving a problem for himself contribute to greater understanding.
6. The activities involved in developmental methods make a greater appeal to active energetic adolescents than do the methods which foster passivity.
7. Method presents greater opportunity for the teacher to observe and diagnose the individual pupil's methods of study, personal qualities, and needs.

Developmental methods require more skill and background than authoritative methods. For this reason, beginning or mediocre teachers are inclined not to use such methods. After having experimented with and attained some mastery in their technique and having become conscious of their peculiar limitations, the teacher who is desirous of improving the quality and effectiveness of his teaching will make increasing use of developmental practices. Developmental methods may be employed with marked advantage if good judgment is exercised in regard to the degree to which the necessary outlay of time is not disproportionate to the educational outcomes which will probably result.

Direct and Indirect Methods.—Fortunately one can learn from the experience of others as well as from one's own experiences. Otherwise for a given individual the scope of learning would be quite limited and time-consuming. One can learn, for example, about the appearance of an object without seeing the object, about a process without seeing the procedure, about sounds without actually hearing them, about pains without feeling them, about a person, a business, a war, a legislative body, or a treaty without having any direct experiences with them. Learning can result, and a great deal of it does, from what is called *vicarious* experience—the experience of others at second hand. Practically all that one receives from newspapers and from the radio, in fact from all printed or written material, from all spoken words, and from all forms of graphic art (pictures, graphs, models, and the like), is vicarious experience.

The relative advantages of direct and indirect methods are similar to the relative advantages of developmental and authoritative methods, as will be recognized from a comparison of the two types of methods. In learning from one's own personal experiences one is likely to learn more accurately, to retain what is learned longer, to understand more completely, to be more interested in the process of learning, to see better the value of the things learned, to enjoy more greatly the learning activities, and to learn more quickly and more completely.

Nevertheless, many of the things which are desirable to learn must be learned from vicarious experience. It is not possible to experience those things which have already happened and which cannot be caused to happen again for the purpose of teaching history. The same is true of most of the content of science, geography, and the social studies, and of some of the content of all other subjects.

The teacher should at all times recognize the limitations of the use of vicarious experience in learning, and he should so plan the learning experience that it will suffer as little as possible from those limitations. Pictures, models, field trips, dramatization, and other representations should be employed frequently in order that vividness, accuracy of details, pupil interest, and understanding may be achieved. The learning situation should possess as much of reality as is possible subject to limitations on the expenditure of time and money. Because of the great superiority for the purposes of learning and teaching of various approaches and substitutes for reality and personal experience, Chapters 16 and 17 are devoted to the discussion of the values, uses, types, and techniques of visual and auditory aids.

Teaching for Retention.—Quite often information once acquired remains with one; more often it does not. Information is retained in the sense that one's neural tissue is so modified that the mental content may be experienced again in the absence of the original sensory stimulus. Whether every experience permanently modifies the tissue involved so that there is always the possibility of recall or whether only a portion of experience so modifies the tissue that retention is permanent is not definitely known. One does know, though, that much of what one experiences cannot be recalled. Whether in a given instance this results from failure of retention or failure of recall cannot be reliably determined.

The pupil does not retain all the information he acquires, or if he does he is not able to recall it. To be sure, much of what he has read, of what he has been told, of what he has experienced directly (visually or otherwise), and of what he has developed for himself inductively or deductively he is able to recall after an interval.

Several factors operate to determine what elements in a learning experience will be retained. One of the chief factors is the *intensity* or *vividness* of the experience. The degree of intensity of an experience is conditioned by

1. The presence of an active interest in the experience
2. The novel elements in the situation
3. An understanding of the significance of the experience
4. Impressions made by emotionally charged experiences
5. The variety and intensity of the sensory reactions involved in the experience
6. Absence of irrelevant distracting factors such as hunger and worry
7. Degree of attention and concentration upon the experience
8. Physical fitness

Because of the difficulty of arranging classroom learning situations in which all these factors are present, it is necessary to strengthen initial learnings by drill and review. Properly used, the developmental methods described in earlier sections of this chapter are effective in promoting satisfactory retention. While appropriate recitation procedures, such as skill in questioning and giving assignments are important, they are poor substitutes for real challenging lifelike problems in the classroom.

The principles of drill applicable to retention of knowledge are analogous to those for the development of skills and habits. These principles are discussed in Chapter 13.

Teaching for Understanding.—The distinction between acquiring information without understanding it well and acquiring information which is relatively well understood is of great importance in teaching. To acquire information with relatively little understanding (1) is difficult and requires more time than it is worth in most instances; (2) taxes student interest and tends to build unfavorable student attitudes toward the subject, the teacher, and the school; (3) yields the learner little satisfaction in its acquisition; (4) means that the student will be able to make little use of it and is likely to misapply it; and (5) fails to furnish the learner with basic understanding which would enable him to learn and understand other things better.

Many schoolboy howlers or boners are the natural results of learning without understanding, e.g.:

> Pompei was destroyed by an eruption of saliva from the Vatican.
> The circulatory system consists of veins, arteries and artilleries.

Socrates died from an overdose of wedlock.
Wifehood indicates a woman's martial status.

A large proportion of misunderstandings and, hence limited, ineffective, or wrong learning, results from the learner's lack of knowledge of the precise meaning of words. No matter how much he may recite acquired information, it is of little or no value to him if he does not know the meaning of the words or the significance of the information with respect to its uses and implications. For this reason alone, if for no other, teachers should take especial care to see that learners learn the meaning of all important words in the more important materials being studied.

Understandings involve a knowledge of the implications, meanings, and significance of units of information, e.g., the significance of the terms of a treaty, of the volatility of a gas, of the presence in large quantities of a certain type of bacillus, of the failure of the United States Senate to ratify the League of Nations Covenant, of the fact that rainfall is only twelve inches a year in a certain place, and so on.

Understandings also involve the answers to questions as to how something behaves under various conditions, its uses, and its properties—e.g., what happens to a copper wire when too much resistance is developed to an electrical current.

Understandings are also concerned with the significance of each of the steps in a process and of the sequence of steps. In problem-solving, for example, one gets the problem in mind, searches for pertinent data, arrives at a tentative hypothesis, and checks the tentative hypothesis for verification.

Understandings likewise deal with cause and effect and other relationships such as concomitant variation (e.g., height with weight, intelligence with school achievement, wars with economic conditions, precipitation with barometric pressure).

In the development of understandings, the following procedures, discussed more fully elsewhere in this volume, are useful:

1. Explanations—verbal and with illustration
2. Problems of application
3. Problems of evaluation
4. Discussions among learners
5. Visual and audio aids
6. Developmental methods as opposed to authoritative methods

Another important type of knowledge is the general concept, e.g., the nature of an organism, of culture, of evolution, of a mathematical function, of social responsibility, of a typhoon, of the poverty of India, of the barbarism of Nazism.

Concepts include definitions. The increase and enrichment of concepts is one of the most valuable educational services a teacher can render a pupil, and yet the "schoolmarm," the novice, and the lesson-hearing type of teacher are quite ineffective at producing this precious type of educational growth.

2. Acquisition of Habits and Skills

The psychology of habit formation and the psychology of the development of skills are very much the same. A *habit* is an acquired propensity for the organism to behave in the same pattern every time a certain condition or set of conditions is present in the environment or behavior of the organism or in both. The stimulating or conditioning environmental element may be quite specialized. It may involve a sequence in time, as when, immediately upon arising, one is conscious of being about to go to meet a person. It may be any person, any of a certain group of persons but no one with whom we are intimate, or it may be an individual with whom we are well acquainted.

Examples of Habits and Skills.—Habits which are desired out comes of learning and teaching include:

Crossing every *t*
Checking all mathematical computations
Acknowledging introductions
Putting away materials and tools at the close of a work period
Capitalizing certain words or types of words
Use of a certain word or phrase instead of its alternatives in expressing an idea
Suspending judgment on important questions or making tentative instead of final judgments

Skills are more or less complex behavior patterns. The word *skill* is used to denote the degree of proficiency, accuracy, or speed rather than the degree of certainty of a given behavior pattern under a given environmental circumstance or set of circumstances. Among skills typical of desirable learning outcomes may be mentioned the following:

Skill in adding common fractions
Skill in drawing
Skill in handling a lathe
Skill in solving a problem in algebra

Skill in performing a laboratory experiment
Skill in clear speech
Skill in operating a typewriter or a sewing machine
Skill in playing a musical instrument
Skill in conversation or in conducting a meeting

As may be seen from an examination of the nature of the skills and habits listed in the foregoing paragraphs, they may be physical or mental or a combination of both.

Basic Psychology of Acquiring Habits and Skills.—The fundamental principles underlying the acquisition of habits and those underlying the acquisition of skills are very much the same. Fundamental is the factor of *repetition.* A habit results from going through the same behavior pattern a number of times under the same environmental situation or conditions. A skill results from repeating a certain behavior pattern and improving it with respect to speed and accuracy, accuracy meaning effectiveness with respect to a given objective.

In acquiring both habits and skills, it is most important to repeat the behavior pattern without exceptions. Failure to perform in the given pattern under the given situation in forming a habit and failure to behave in exactly the same way and in the same sequences (except as limitations of the present ability of the individual may prevent) in developing a skill should be avoided in the establishment of satisfactory behavior patterns.

In both types of learning, opportunities for repetition should not be spaced far apart, especially in the first stage of learning. For economical and effective learning there must be interest and desire to perform in the given pattern. This is especially true of the development of a skill. To insure the certainty of performance in the case of habit and improvement in the case of a skill, the performance must be associated in the mind of the learner with pleasurable consequences, especially in the case of skill development, e.g., satisfaction resulting from the knowledge or the expectation of improvement which more than compensates for whatever fatigue or boredom accompanies practice.

Permanence of Skills and Habits.—Skills and habits, both physical and mental, when once developed to a reasonably high degree of certainty and efficiency are relatively permanent acquisitions, far more so than detailed information. For that reason, as well as by reason of the essential nature of a great many skills and habits as integral parts of important education, the teacher must be alert to realize when the opportunity is at hand to contribute to the formation of a desirable habit or the development of a useful skill. A major section of Chapter 3 is devoted to skill development.

3. Acquisition of Ideals and Attitudes

Teachers are ordinarily not so effective in developing the ideals and attitudes which are desired outcomes of school experiences as they are in developing skills, habits, information, and generalized ideas and concepts. This is unfortunate, as ideals and attitudes are very powerful determiners of human behavior. They constitute the sine qua non in education for good citizenship, the most important objective of education.

The teacher's relative ineffectiveness in developing ideals and attitudes results from three factors: (1) the degree of possession of an ideal or an attitude is relatively difficult to measure; (2) the contribution made by teaching for a week, a month, a semester, or a year is rarely measurable in the case of most ideals and many attitudes; and (3) the development of almost all desired ideals and most attitudes is the result of school experiences in many school subjects and in all grades, and of out-of-school experiences at home, at play, in leisure reading, at church, and elsewhere.

Procedures in Developing Ideals and Attitudes.—The methodology effective in developing ideals and attitudes is not so far advanced as is the methodology of stimulating the acquisition of information, or that of developing habits and skills. Ideals and attitudes cannot always be approached directly and in a simple fashion. The learning of a date, a rule, or any other sort of fact or the acquisition of a skill is something which may be assigned as a lesson for a day or a week or a month, and teacher and learner may proceed consciously and directly to facilitate the learning process.

The development of ideals and attitudes does not lend itself to a simple, direct procedure. A given ideal or a given attitude can rarely be assigned for study. In fact, contributions to the development of ideals and attitudes almost invariably accompany the acquisition of more specific skills, habits, and information. Naturally teachers tend to focus upon developing the outcomes which are the immediate objectives of the particular day or unit, progress toward which can be measured easily.

It is clear however that ideals, attitudes, and interests are powerful influences on and determinants of human and social progress and happiness, and that, once acquired, they continue to function long after the great bulk of information has sunk below the level of ready recall.

The Development of Ideals.—Educationally and psychologically speaking, an ideal is a standard of perfection accepted as such by a particular individual or group of individuals. The meaning of *ideal* therefore involves the element of subjectivity. It is most commonly used to connote a standard of excellence or a person or object possessing excellence toward which or whom the individual or individuals who experience the idealizing have an emotionalized systematic reaction. This emotionalized reaction is one of admiration, or of wishing to be or to be like.

Among ideals which are important educational objectives may be mentioned the following examples, which are classified as to types:

1. Honesty, reliability, fairness, thrift, capacity for service to others. characteristic repayment for services and favors
2. Certain dimensions of bodily figure, physical beauty, physical strength, physical skills
3. Facility of speech, ability to think clearly
4. Social popularity, social graces, leadership, good fellowship

All of the ideals listed above meet social approval. Many persons accept less desirable ideals, e.g., sharpness in business deals, power over other persons, sexual sophistication, social toughness, lack of conscience, and ability to deceive others.

Obviously it is of great importance that the ideals of the greatest value to society are inculcated. Wherever high ideals are not present, lower ones are certain to exist. The behavior of any individual is determined to a great extent by the character and strength of his ideals, for it is in great part an attempt to realize those ideals.

The basic psychology and methodology of the development of ideals cannot easily be expressed in terms of specific procedures or techniques. It involves many of the procedures and techniques used in working toward other types of outcomes. The most important principle probably is that the learner shall have contact with the desired ideals in the form of reading, discussion, or observation of individuals possessing the ideal qualities under such conditions as will present the ideal in a favorable light.

Opportunities occur daily in almost every class for young people to establish some desired ideal or to strengthen those they already possess. Either directly or by implication one or more of the desired standards can be brought into the consciousness of learners in such a way as to promote acceptance. The most effective type of approach is through personification. Young people, especially, are likely to accept or develop ideals which are characteristic of some individual whom they admire. Perhaps members of their own group possess the same ideals, or perhaps the individual represents an ideal already held by the youngster. For example, if a much publicized war hero, athlete, or movie star or some well-liked older relative or neighbor possesses a good characteristic, manner, or standard of thought or action, there is considerable likelihood that the adolescent will idealize that characteristic, particularly if the characteristic is logically associated in some way or another with the success of the one admired. To be sure, there is no certainty that the admirer will idealize all or any of the good characteristics of the hero, but the chances are favorable that the hero will become one source of ideals.

The opportunities to bring to the attention of young learners desirable ideals as portrayed by fictional characters and historic personalities are very great in teaching literature, history, and current events. There are also numerous opportunities in teaching science, art, music, and other subjects to point out leaders in these fields deserving of emulation and likely to inspire. Opportunities to present ideals in the abstract—e.g., accuracy of calculation, neatness of written work, intellectual honesty, and service to humanity—occur in teaching every subject. Perhaps one major caution should be stated here as a fundamental principle. Teachers must be adroit in the development of ideals. Methods too obvious, too energetic, or seemingly lacking in sincerity are not only likely to prove ineffective but may actually tend to arouse antagonism or to promote indifference.

The Development of Attitudes.—Educationally and psychologically speaking, an *attitude* is an individual's predisposition toward other persons, ideas, institutions, practices, or courses. Following are some illustrations of attitudes to the development of which teachers should make important contributions:

Favorable attitudes toward: our social institutions, practices and principles, e.g., democracy, right of free speech, cooperation, education, freedom of religious worship, thrift, peace, logical thinking, monogamy

Attitudes of tolerance toward: other individuals of races, nationalities, and religions than one's own; beliefs, practices, and opinions of others which are contrary to one's own but which are not clearly contrary to the welfare of the nation and society

Unfavorable attitudes toward: immoral, unethical, and antisocial principles and practices, e.g., waste, class distinction, physical violence, superficiality, cruelty, hypocrisy, and dishonesty

It is not easy or necessary to make sharp distinctions between ideals and attitudes or to attempt to plan a different method of teaching for each. They are quite similar in nature, overlapping in characteristics, complementary and mutually supporting each other, and the methods of developing the two types of outcomes are almost identical. In developing ideals, it is important for teachers to realize their educational importance, to watch alertly for opportunities to contribute to the development of desirable ideals and attitudes, to avoid attempts to force them unwisely by lecturing, "preaching," or compelling conformity, and to seek their development in concrete and specific situations rather than in verbal and abstract forms.

Non-curricular Contributions to the Development of Ideals and Attitudes.—The ideals and attitudes of high school pupils tend to grow out of and be influenced by the ideals and the standards of their fellows and of their teachers as they come to know them in the daily school work. They also grow out of reflection and daydreaming stimulated by the reading of biography, literature, and other factual and fictional materials. The fairness, patience, forcefulness, aggressiveness, pleasantness, democracy, sympathy, neatness of appearance, masterliness, frankness, poise, and good judgment of a classroom teacher do much to help shape ideals and attitudes of pupils. They also may have their origin in all sorts of student activities, such as athletics, dramatics, debate, student government, classroom organizations, and musical and journalistic enterprises. They are continually being strengthened or reshaped by experience within and outside the class. They are rarely developed well by continued "preaching."

4. Acquisition of Tastes and Interests

Whether one is educated is as much a matter of what tastes and interests one has acquired as what one knows, if not indeed more so. The truly successful teacher is one who not only can assist learners to acquire a considerable degree of mastery of the subjects taught, but who leaves his students with a desire to learn more and with abiding interests which will cause them to continue to learn and to engage in activities based upon what has already been learned.

Opportunities for Developing Tastes.—The master teacher is always conscious of the importance of guiding learners in the acquisition of desirable tastes and interests and always watching for opportunities to contribute to their development. The superior science teacher, for example, utilizes the available opportunities to develop interests in various fields of his subject, in procedures, in discoveries, in unsolved problems, in scientific movements, and in the pioneers and great men of science. The superior teacher of social studies leaves his class with interests in new developments in government; new movements in social thinking; current economic theories and business trends; the people of other countries and our relationships with them; and current local, state, national, and international problems such as state rights versus federal control, cartels and monopolies versus free enterprise, the proper functions of labor unions, government relationships to business, the problem of full employment, and the development of means of preventing wars.

The superior teacher of a foreign language is not content merely to teach grammar, pronunciation, and translation. He also uses his opportunities to develop a lasting interest in the development and growth of the language, in its literature, and in the people who speak it and their customs.

The superior teacher of English strives to develop not only a taste for and interest in good literature in general, but also an urge to understand the relationships between literature and life, an interest in authors, especially living writers, in human nature, social and psychological behavior, and human emotions and customs.

Teachers of art and music have always had as a most important objective the development of interests in and tastes for the higher levels of art and music, though many of them may properly attribute their ineptness in attaining such objectives to their emphasis upon information and skills, a weakness shared by many teachers of literature.

Procedures in Developing Tastes.—Individual tastes and interests have their origin in meaningful experience. Initial experiences do not always breed tastes and interests; indeed, often there is at first a slight distaste and lack of interest sometimes amounting to boredom. This constitutes a challenge to skillful teaching. Continued contact with ideals under favorable circumstances will, though in a minority of cases, beget interest.

The most effective teachers are neither discouraged nor irritated by evidence of initial lack of interest or dislike and are not too much encouraged by immediate interest or what apparently is the quick development of taste. Continuing development of worthy interests is dependent to a large degree upon the teaching.

The master teacher also recognizes and makes appropriate provision for the fact that tastes and interests are individual matters. Not all people can be expected to be, nor is it desirable for all to be, interested in the same thing and possessed of the same tastes. The important consideration is that each student increases the number and keenness of his interests and tastes for better things.

Much teaching is of the type sometimes referred to as "appreciation teaching." It involves not only the development of tastes and interests and frequently of ideals and attitudes, but also the information understandings and skills involved in analysis and evaluation. Since it involves the development of all these outcomes, the successful appreciation "lesson" is in practice a combination of several of the principles and techniques for developing all those various types of outcomes.

Following are suggestions which may prove useful to teachers in teaching for development of tastes. Most of them apply with appropriate modification of wording to the development of ideals, interests, and attitudes.

1. Employ subject matter appropriate to the age and maturity of the pupils. Developing taste is a slow process, and the level of subject matter cannot with success be elevated abruptly. Subject matter beneath the level of development of the child is likewise ineffective.
2. The instructor should show some enthusiasm for the material. He should not be effusive or gushing, but sincerely appreciative.
3. Care should be taken to avoid overanalysis. The mechanical dissection of a beautiful piece of literature is not likely to arouse the desired appreciation.
4. Do not force the student to express his reaction. While opportunity should be provided for spontaneous expression, and while such expression should be mildly and judiciously commended, no pressure should be brought to bear. A premature expression, especially if forced, is likely to be unfavorable or hypocritical. It must be remembered that the better tastes develop slowly.
5. Do not attempt to standardize results in developing appreciations. Tastes differ, and they develop unevenly. Wide individual differences must be expected, and these will require patience and careful procedure.
6. Students should not be talked into "appreciation." Appreciation should grow out of direct experience. A pupil should be led to

discover points of beauty or enjoyment and should not have these thrust upon him.

7. The pupil's possession of productive technique may enhance appreciation, and usually does, but compulsory training in productive technique may develop attitudes which will hinder the development of the desired attitudes or interests.
8. Ideals are best acquired in the concrete. Performance, even if fictitious or imaginary, is superior to abstract concepts.
9. Care must be taken to prevent digression or distraction which will arouse conflicting or incongruous feeling-states.
10. Care should be taken to keep in the background the teacher's intention to develop appreciation.
11. Appreciation of thought should not be sacrificed to appreciation of form; the former is spiritual, the latter sensual.
12. Newly found interests and tastes should be cautiously directed into satisfying activities. Care must be taken, however, not to force these. Haste never made waste more certainly.
13. If after a fair "exposure" the material used does not bid fair to arouse favorable attitudes, persistence may not avail anything. A change of diet may serve much better.
14. As far as possible, the student should find esthetic or moral values himself. Ideals are naturally discovered; they are rarely taught. Moralizing is ordinarily unwise and to be avoided.[1]

5. CONCOMITANT OUTCOMES

Every teacher knows that when he is teaching for certain objectives, to produce certain outcomes of teaching, the effects upon the pupil and his educational growth are never confined to effects relative to the objectives and outcomes sought. The incidental or by-product effects or outcomes are commonly rather important, frequently more important than the outcomes intended.

This is a matter of prime importance in connection with the incidental effects of types of motivation of learners. As was pointed out more fully in Chapter 4, teachers who induce their students to engage in learning activities in such a manner as to develop unfavorable attitudes "kill the goose that lays the golden eggs." Such a procedure is clearly one that obtains an immediate and often ephemeral educational growth at the expense of forever stunting or preventing a greater growth through the years to come.

A multitude of ideals, attitudes, interests, tastes, general ideas, and information are in the process of growth, or ready to be stimulated, at all times. The teacher is often unconscious of the effects of teaching and learning activities in regard to these outcomes. Care must be taken to keep to a minimum such concomitant outcomes as:

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[1] Adapted from *Modern Methods of High School Teaching*, by Harl R. Douglass, Boston: Houghton Mifflin Co., pp. 27-28.

1. Development of misunderstandings, misconceptions, and false impressions
2. Development of unfavorable attitudes toward subjects, people, ideas, or practices, attitudes which are either unfair, uncalled for, or not to the interest of the learner or of society, e.g., an attitude of hostility toward all Russians, superiority toward all Chinese, or resentment toward constituted authority
3. Destruction of potential or existing interests in any field of thought and study or any worth-while activity
4. Development of unworthy tastes, e.g., for cheap literature, "movies," dress, or recreational activities
5. Development of indifference toward thrift, the feelings of others, responsibility for the general welfare, good speech, or good manners.

Merely because it is difficult to measure adequately pupil growth in ideals and interests, the teacher should not permit himself to underestimate the importance of these types of educational outcomes. The fact that they are not objectives peculiar to the particular field or subject taught by a given teacher should not cause him to shelve responsibility for contributing his share to the development of important outcomes.

Questions, Problems, and Exercises

1. What is the difference between "knowing" a specific fact and knowing its meaning—between learning a specific fact and learning its meaning?
2. Which is more important: our knowledge or our interests and attitudes? knowledge or conduct? habits or skills?
3. What is a concept? Mention three. Give some suggestions for leading young people to acquire a given concept.
4. Select some high school subject (e.g., general science). Mention several developmental methods commonly employed in it; several authoritative methods.
5. Be able to discuss in class "Teaching for Understanding," mentioning its importance and its methods as applied to some one high school subject or field with which you are familiar.
6. Select a high school subject and mention four to six skills to the development of which that subject should contribute.

7. What are the most important principles to observe in developing a skill? a habit?
8. Select a high school subject and mention four to six ideals or attitudes to the development of which that subject should contribute.
9. What are the most important precepts for teachers regarding the development of desirable ideals and attitudes?
10. Select a high school subject and be able to tell what tastes or interests the subject should contribute.
11. Mention several very important general or concomitant outcomes to the development of which every teacher and every subject should contribute.
12. Which types of outcomes are usually overemphasized and which ones underemphasized and why?

Chapter 6

DISCIPLINE AND HIGH SCHOOL TEACHING

1. Basic Concepts

Discipline in the high school seeks the development of abilities, attitudes, and habits which are essential to intelligent self-directed behavior. It is the process of guiding adolescents toward ever higher levels of rational human conduct. The ultimate objective of all forms of discipline in the high school is the pupil's growth in accepting responsibility for his actions with due recognition of the individual, social, and spiritual values involved.

Therefore, the high school teacher should have a clear understanding of the concepts which underlie the purposes and nature of school discipline. Many of the errors in disciplinary procedures in our schools can be traced to the teacher's lack of understanding of the fundamental relationships between discipline, good citizenship, character development, and personality. Some of the modern concepts of these relationships are discussed in the following paragraphs.

Rational Human Behavior Is Learned.—In a democracy rational human behavior is the result of an individual's experiences in making choices among various alternatives with consideration of the probable consequences for himself and others. Acquiring rational behavior, like other types of learning, must be accompanied by satisfaction with right responses and annoyance at incorrect ones. The type of activities from which an adolescent derives his satisfactions is an important consideration in guiding his behavior. The individual who finds his greatest satisfaction from self-centered activities displays a lack of social maturity. In ascending order of worthiness may be mentioned the satisfaction derived from one's loyalty to an individual, loyalty to a group, and loyalty to an ideal of human welfare, such as justice, tolerance, or sympathy for the underprivileged. Behavior patterns are acquired as component parts of total learning situations rather than in isolation. An individual's conduct cannot be judged apart from his social environment. Discipline, instruction, and other environmental factors are mutually interactive. Before an individual pupil's behavior is condemned too harshly, the causative factors in the "social climate" and the standards of the group should be analyzed.

Acquiring Proper Patterns of Behavior Involves Self-Activity on the Part of the Learner.—While it is true that the adolescent is influenced primarily by his environment, the teacher should be concerned with the sum total of temperament, outlook, and habitual choice which we call personality. Personality is not entirely the product of forces outside the self. It is the resultant of the reciprocal action of the self and environmental factors.

Adolescents should be given the tools of analysis and synthesis and provided with criteria for judgment with reference to conduct just as they are given a basis for evaluating the merit of a selection in English literature. Growth in proper behavior must be based upon insights and understandings of how individuals may become better judges of good and evil. Good conduct does not result from mere drill on the accepted ways of the crowd. Intelligence is a necessary ingredient of morals.

Individual Diagnosis and Treatment.—The many sources of pupil misbehavior and maladjustment make an understanding of the individual child necessary in the establishment of proper behavior patterns. In diagnosing child behavior the teacher should recognize the part that emotional factors play in determining human conduct. Many of the important decisions made by individuals, particularly the more immature, are largely on an emotional basis. It has been said that "intelligence is a mere speck floating on a vast ocean of emotion." The function of education is to lead the child toward greater mental maturity and thereby to assist him in making more of his decisions on a rational basis. However, one who takes a realistic view of human behavior cannot fail to recognize the critical importance of the impact of the emotions upon conduct.

Habits of Correct Behavior Require Practice.—Practice is necessary in situations in which errors can be gradually eliminated. It is no more reasonable to assume that all errors of conduct can be eliminated from the very beginning than can errors in English usage. Only as numerous opportunities are presented for correct performance, accompanied by clear understanding of meanings, does the individual learn better ways of action. Errors in conduct cannot be blotted out by edict or by intellectual means alone any more readily than can errors in spelling or arithmetical computation. Practice should be continuous to the extent that acceptable behavior becomes more or less automatic. The good citizen does not have to deliberate in every situation the advisability of proper conduct.

Docility, Conformity, and Unquestioning Acceptance of Authority Do Not in Themselves Constitute Discipline.—Only when the individual understands the implications of his acts do they become significant for his character development. The negative approach in which the teacher acts as a "mere censor of surface manners" is not conducive to the individual pupil's growth in accepting moral responsibility for his acts. The teacher who plays the role of critic rather than that of a stimulator to right behavior becomes a mere "symbol of a system of external controls." The teacher who wins the reputation among pupils of *protesting too much* encounters difficulty in becoming a positive force in the character development of adolescents.

Learning to behave properly is among the most complex of all learnings. It is achieved only by constant effort in intelligent choosing and acting. Adolescents need guidance, not dictation, in establishing habits of good conduct. The teacher who attempts to become a "fire extinguisher of flaming youth" may discover that he has caused the flame to smolder temporarily only to break out later in greater intensity. The long-term effect of any form of disciplinary control is the best measure of its effectiveness.

Human Freedom Is More Than the Mere Removal of Restraints.—Freedom is achieved only when the individual is able to use his freedom from external restraints in an intelligent, positive manner. If the teacher is to assist the pupil in achieving the "good life," he must recognize that the good man is not one who merely observes the rule, "Thou shalt not." The positive aspects of living in freedom must be emphasized. Unless the man freed from restraints develops the resources within himself to establish a satisfactory independent existence, he identifies himself with authority in the form of a person or institution, thereby submerging his freedom. Germany after World War I illustrates a people who lacked the inner resources necessary for freedom: they turned to Hitlerism.

2. Significance of School Discipline

Implications for Democratic Living.—The existence of a democratic society is dependent upon self-disciplined citizens who act with proper consideration of the social welfare. Education thus becomes more than a process of growth. It is growth in the direction of social intelligence and behavior. The main problems of this generation are social in nature. Despite his progress in technological matters, man has yet to learn how to live wisely and well with his fellows. In fact, the mechanization of industry has created numerous new social and economic problems. The resolution of these issues is dependent upon more than the acquisition of knowledge and skills. It involves the development of attitudes and procedures which promote social living.

By its very nature the high school is both an educational and a social agency. Social tendencies emerge. In this stage of an individual's development social habits are established. Prior to an adolescent's entrance into high school, the source of disciplinary control is largely the child's loyalty to parents and teachers. In his efforts to become an accepted and acceptable member of a social group, his behavior patterns based upon loyalties to individuals are broadened to include group control and restraints. The responsibility of the high school teacher is therefore to assist the adolescent in adapting his behavior to group activities and also to create a social climate in the school conducive to proper individual and group behavior. In this connection one of the chief purposes of discipline in the high school emerges, namely that of providing conditions which will promote the development in each pupil of the qualities and habits which make for self-control and good citizenship.

Implications for Individual Development.—The social objective of discipline fortunately is not in conflict with the idea that "discipline of both the home and the school should recognize the dignity of each individual and his right to seek recognition and direct his own activities." [1] In democratic situations, the welfare of the individual and that of the group complement and reinforce each other.

Discipline, at its best, assists the individual in the establishment of desirable habits of life. Helping the child to solve his own behavior problems is synonymous with the development of good mental health. It is guidance in personal adjustment. Thus conceived, discipline must be based upon a recognition of the fundamental drives to human action. Among the most impelling of these are desire for personal recognition, desire for social approval, desire for new adventure, and desire for security. Properly directed, these tendencies become potent forces for right action. The adolescent needs wise guidance in directing them into the right channels. It is stupid for the teacher to disregard or thwart them.

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[1] Warren R. Good, "Discipline: For Subservience?" *Current Viewpoints in Education*, Ann Arbor, Mich.: University of Michigan, p. 111.

Every feature of the school environment leaves its impression for good or ill upon the child. The extent to which attitudes favorable to cooperation are developed by the high school pupil is dependent upon the success of the teacher in assisting the pupil to harmonize his personal wishes with his social environment. An environment in which confusion and disorder prevail does not bring out the best in an individual. On the other hand, situations characterized by order and decorum are conducive to the establishment of effective individual habits of study and work.

Discipline and Order in School.—The immediate objective of school discipline is to maintain effective work conditions. One who takes a realistic view of the school must recognize the necessity of a school environment which is conducive to constructive pupil endeavor. Stated in negative terms, it is difficult to establish effective habits of study in a situation characterized by disorderly, antisocial conduct.

Within recent years, many theorists have tended to underestimate the value of discipline in achieving this objective. This point of view represents a reaction to the abuses and errors of a system of pupil control based upon strict, unquestioning obedience to sets of formal rules and regulations in which the purpose of discipline was "order for order's sake." An awareness of the evils inherent in arbitrary teacher authority does not justify taking the opposite extreme position in which the teacher relinquishes his role as a responsible leader in children's activities. Positive, constructive leadership is not necessarily dictatorship. Children appreciate and profit by mature, intelligent teacher leadership in the maintenance of conditions which prevent a needless waste of time and confusion in their work.

Implications for Success in Teaching.—The ability to maintain good discipline has long been considered one of the chief measures of teaching competence. Parents and the general public evaluate the teacher's success largely on the basis of his skill in establishing and maintaining pupil morale. Superintendents and principals attribute more failures of teachers to failure in this area than to any other cause.

The emphasis placed upon this aspect of the teacher's work has caused many teachers to consider maintaining "order" as an end in itself, and thus to isolate and treat it as a separate problem. The evidence is conclusive, however, that effective teaching procedures are the surest guarantee of success in discipline. Good order and morale are natural concomitants of teaching which provides pupils with significant, challenging problems along with facilities and freedom to attack these problems. In considering the relation of ability in discipline to teaching success, the teacher should avoid the error of placing disciplinary practice on the low level of force and arbitrary authority rather than on the plane of social control and self-direction.

It is equally important that the teacher resist the temptation to sacrifice long-range abiding values of discipline for the alluring expediency of establishing a form of accepted disciplinary control and thus gaining popular approval.

These precautions should not be construed to mean that the teacher should be indifferent to the wishes of parents that the school assist their children in becoming "disciplined" citizens. The desired outcome is praiseworthy. In its attainment, however, the teacher has the responsibility of utilizing means which are psychologically and sociologically sound.

3. CONDITIONS INFLUENCING ADOLESCENT BEHAVIOR

The Social and Economic Status of the Adolescent.—In order to understand and direct the adolescent's behavior in an intelligent manner the teacher should recognize that individual behavior is in part the resultant of many forces in the local community, operating singly and in combination. Some of these forces are economic; others are rooted in the mores of the community, including the prevailing standards of conduct of adolescents and adults.

Particularly significant in their impact upon the thinking and the overt behavior of youth are the standards of value held by the members of the community. If the criterion of success in the community is material affluence, the adolescent who realizes that his family is not able to own an expensive automobile or live in the so-called fashionable section of the city may develop deep feelings of inferiority. Equally unfortunate is the snobbery of the youth whose family can afford the things which large numbers of his associates do not possess. These inequalities are thrown into sharp relief in many small communities. While these communities may not have any extremely wealthy or very poor persons, the differences are nevertheless very real to the sensitive adolescent who is desirous of recognition by the members of his own age group.

The idealistic outlook and the sense of fairness of young people tend to cause them to ignore superficial differences and judge persons on the basis of their worth. However, if contrary attitudes are deep-seated in the community and especially if parents emphasize differences in wealth in their conversations with their children, these ideas may be reflected in the behavior of adolescents.

Where community adherence to wealth as a standard of personal value exists in its extreme form, an individual's acceptance by various social organizations may be mainly on an economic basis. If by force of personality and the possession of qualities of leadership an individual is able to gain admittance into the so-called exclusive circles, he may still be confused in his thinking and handicapped in his activities. The extent to which an adolescent may be influenced by his relatively unfavorable position is illustrated by the story of a young college woman who related that, after she had been accepted by a group of high school boys and girls, she was greatly humiliated because she felt that her house was not up to the standard in size and location of those of her associates. Also illustrative is the case of the high school boy who was so ashamed of the house and neighborhood in which he lived that when his high school friends took him home after school parties, he would always get out of the car a block or two from his home.

Many high school youths encounter embarrassment in their attempts to meet the expense of participation in the present-day social activities of youth. Teachers should recognize the fact that the amount of money required for such participation is much greater in most communities than it was a generation ago. Both the school and the community have a great responsibility in providing wholesome recreational opportunities for youth at a minimum expense. In some instances it may be desirable for individual pupils to take part-time employment.

Gangs also may be formed on the basis of financial or social standing of families. It is not uncommon for the "dead-end" boys or ostracized minority groups to clash in acts of violence with the sons of the elite. Students of juvenile delinquency of boys are convinced that the inability of many boys to have the things their associates possess is the source of many crimes against property.

The responsibility of the teacher is to assist pupils in the development of a sound set of values. There is need also for the schools to exercise leadership in the education of adult members of the community regarding what should constitute the basis of respect for human personality.

Adult members of a community frequently are overcritical of the social activities of young people. The failure of the latter to conform to all the ideas of adults often makes them the objects of idle and sometimes evil gossip. The natural reaction of youth is a feeling of hostility, which makes it difficult for teachers to assist them in correcting their errors in judgment and conduct.

In many communities also there are adults whose laxity of conduct sets a bad example for youth and who frequently exercise considerable influence over the behavior of both boys and girls. The apparent recklessness of some of these adults surrounds them with a certain degree of glamour which appeals to immature youth.

Physical Health and Development.—Studies of children enrolled in our schools reveal that at least one-third of them are handicapped by serious defect or illness and that another third have minor defects. Intellectual, social, emotional, and physical traits are so intimately interrelated in their development that diagnosis and treatment of physical defects are essential in an education program. Many problems of learning and behavior can be traced directly to the child's physical handicaps. Feelings of physical inadequacy frequently result in social maladjustment and acts of overcompensation. This is especially true if the handicap is serious enough to prevent the child from participating in games and sports.

Many problems of discipline grow out of the restlessness of children resulting from the overactivity of certain endocrine glands. Malnutrition, poor vision, skin disorders, and defective hearing may contribute to unsatisfactory achievement and irritation with the school situation.

While the teacher cannot be expected to become an expert diagnostician of physical disease, he should be able to recognize the signs of malnutrition and of mental and physical fatigue as bases of irritability and other forms of maladjustment. He should also be alert to subnormal conditions of vision and hearing and refer these cases to competent medical authorities. Proper seating arrangements, adequate lighting, hot lunch programs, and health instruction represent a few of the most important things a school can provide in assuming its responsibility for the physical welfare of pupils.

Significance of Drives in Pupil Behavior.—Authorities have estimated that 60 per cent of discipline problems involve both individual case history and psychological structure of the group. Basic to an understanding of adolescent behavior is a diagnosis of the individual's drives to action. Much of human activity can be traced to certain physiological conditions of the human organism. Hunger and thirst are among the simplest of these biological urges. The following list of drives is given by Symonds:[2]

1. *Success:* in school studies, in athletics, in social relations, in leadership, in extracurricular activities, and in personal appearances
2. *Approval:* by teacher, parents, and friends for accomplishments and conduct
3. *Sense of belonging:* to clubs, gangs, school, home, friends, athletic teams
4. *Security:* in home, in school work, in friendships, in athletic ability, in social activities, in personal appearance and acceptance, in economic matters
5. *New experience:* travel, earning one's own money, invention, exploration, new friends, first or new job, social activities, change in school, routine, truancy

The blocking of voluntary action is recognized by psychiatrists as one of the conditions that result in emotional upsets. Failure in school blocks the learning process. Occasional failure is disturbing. Frequent failure is tragic. Repeated failure does irreparable damage to the child's personality. One of the most stupid acts of teachers is to require or expect the child to perform tasks he cannot do. School tasks which are too easy for the child are likewise detrimental. Resentment on the one hand and boredom on the other are natural responses of the adolescent.

In his efforts to assist the child in adjusting to a situation in which he has not been successful, the teacher should avoid calling the child's attention to his difficulty by urging him to greater efforts, by pleading with him to "try hard," or by telling him that his parents are desirous that he succeed. The emotionally charged problem can best be solved by assisting the child to analyze the difficulty and by providing some substitute stimulus to action in which he may have the satisfaction of success. The teacher should avoid making the failing child feel conspicuous before his classmates. The emotional disturbance is usually only one aspect of a total complex. Perhaps the greatest handicap to the non-reader is the complex which accompanies his deficiency.

Emotional blocks may also develop in school situations in which the child is subjected to rigid requirements of conduct or achievement. The examination and marking systems in use in many schools are detrimental to the development of feelings of self-confidence and security, both of which are essential to good mental health. The feelings of inadequacy developed by the domination of parents and perpetuated by the enforcement of arbitrary school standards often become the basis of useless fears which prevent the individual from ever achieving social and vocational efficiency.

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[2] Percival M. Symonds, *Mental Health of the School Child,* pp. 23-24.

Mental Ability and Pupil Behavior.—The type, frequency, and seriousness of disciplinary difficulties are often determined by the mental maturity of the individual. The child of low intelligence is susceptible to the suggestions of other persons without discriminating as to their efficacy. He may also encounter difficulty in seeing the implications of his behavior. The lower his level of intelligence, the less able he is to learn by his own experience or that of others. Many of the problems of discipline, however, arise among children of high intelligence. If the school situation fails to present a challenge for the bright child to exercise his mental abilities, boredom and restlessness may cause him to seek outlets for his powers in undesirable overt behavior. The maintenance of high standards of conduct is dependent, therefore, upon learning experiences of considerable variety and different degrees of difficulty which are appropriate to various levels and types of intelligence.

School Discipline Problems Related to the Home and Family.—An adolescent's behavior is greatly influenced by his home environment. The standards of conduct of his parents are usually reflected in the adolescent's acceptance or rejection of their behavior patterns. The parents' desire to dominate his thinking or their willingness to emancipate him in this respect is an important factor in the pupil's ability to assume responsibility for his own behavior in school. Discord in the family resulting from differing opinions of the mother and father in regard to the severity or the methods of discipline often result in confused and inconsistent child behavior. Discord and bickering in the home, growing out of financial affairs and marital incompatibility, are conducive to emotional disturbances of the child.

The presence of a more talented brother or sister, or a "favorite" child in the home, may cause deep resentments on the part of the less favored child. These may take the form of indifference ("don't care" attitude) or one of shame and humiliation. The child who is a member of a foreign family or minority race which has been subjected to acts of discrimination in the community may encounter difficulty in making satisfactory adjustments to the school group.

The child may become unduly sensitive to the normal reactions of other children to him by withdrawing or compensating activities.

Emotional tensions growing out of home conditions can frequently be alleviated by assisting the child in interpreting the situation in relation to the long-term factors in his development. Interviews with parents and discussions in parent-teacher association meetings of the problems of child behavior may be fruitful. Adult education courses for parents also present opportunities for discussion of the rearing of children.

Pupil Behavior Influenced by Community Conditions.—Assisting youth in becoming worthy members of society is a community-wide task. A test of the community's interest in the welfare of its youth is the extent to which effective steps have been taken to protect children from the following undesirable features of community life:[3]

1. Racial intolerance and animosity in the community which breed a contempt for the rights of others
2. Local industries which disregard child labor laws
3. Poor housing conditions and the existence of slum districts and marginal culture areas
4. Juvenile court officers who fail to recognize the special needs and problems of youth
5. Inadequate provision for wholesome community recreational facilities, which forces young people into futile inactivity or causes them to seek entertainment among surroundings of a questionable character
6. Motion picture theaters showing pictures undesirable for children
7. Shops which display and sell obscene literature
8. Taverns which sell intoxicating liquors to minors

As the chief youth-serving agency of the community, the school should assume leadership in coordinating the efforts of civic, religious, and social service organizations for concerted action designed to promote the welfare of youth. Teachers should avail themselves of every opportunity to arouse the community from the spirit of indifference to the needs of its youth and stimulate cooperation for concerted effective action in their behalf.

Discipline Problems Related to Leisure-Time Activities.—Many of the behavior problems of youth have their origins in leisure-time activities. Recreational facilities are inadequate in many communities to meet the needs of youth. Proper supervision of the activities also is often lacking. Perhaps the greatest deficiency of the typical American community is the lack of a well-organized, year-round recreational program for both in-school and out-of-school youth. Failure to make the recreational facilities of schools available in the evenings and on weekends is inexcusable.

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[3] Charles Howell, "Community Score Card," *The Journal of The National Education Association,* Vol. 35, p. A-14.

Some of the difficulties in worthy use of leisure time may be attributed to the individual. The boy may exercise little discrimination in his choice of movies or other forms of entertainment. He may possess poor reading habits or have limited ability in sports. He may lack interest in worth-while hobbies. Overallegiance to the gang may become a prolific source of trouble.

The teacher has the responsibility to assist youth in developing the abilities necessary for joyous participation in worthy activities. He should also guide youth in the judicious use of recreational facilities which are available in the local community. Camping experience should be provided for every child as a part of a well-rounded educational program. It is essential that the teacher acquire the ability to conduct interesting field excursions and camp activities in which pupils may participate. Recently the State of New York passed legislation making it possible for school districts to carry on organized camping as an integral part of the school curriculum.

Group Influences on Individual Adolescent Behavior.—Only a small percentage of the problems of school discipline can be traced solely to the individual pupil. His behavior is conditioned by the various groups of which he is a member. Low group morale is frequently the causative factor in the misbehavior of individuals. Study of the psychology of the school group may reveal many factors contributing to antisocial or unsocial conduct of individual pupils.

In an analysis of the structure of the school group, Sheviakov and Redl [3] suggest six factors which may cause undesirable individual conduct. The following is an adaptation of their statement:

> Factor I. *Dissatisfaction in the Work Process.* The subject matter may be too easy to challenge the abilities of the students, thereby causing them to seek other outlets. Frustration may result from subject matter so difficult that it produces student indifference or irritation. The assignments may be poorly planned in terms of difficulty or manner of presentation. Finally the activities may be largely or entirely on the verbal level, excluding employment of the motor manipulative tendencies of normal adolescents.

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[3] George V. Sheviakov and Fritz Redl, *Discipline for Today's Children and Youth,* Department of Supervision and Curriculum Development, National Education Association, pp. 44-56.

Factor II. *Emotional Unrest in Interpersonal Relations.* Tensions growing out of strong friendships or animosities among pupils may supersede work interests. Competing cliques within a group may become sources of emotional disturbances. Clashes of personality between pupils and teachers often result in serious maladjustment of the pupil to his work and to the group.

Factor III. *Disturbances in Group Climate.* By the term *group climate* Sheviakov and Redl mean "the basic feeling tone which underlies the life of a group, the sum total of everybody's emotions toward each other, toward work and organization, toward the group as a unit and toward things outside." They give the following examples of different types of group climate:

A. Punitive Climate: One in which pupils are accepted or rejected on the basis of the teacher's behavior code. The children usually develop a hypocritical attitude toward each other or the teacher.

B. Emotional Blackmail Climate: In this situation the children develop a strong emotional dependence upon the teacher and there is strong rivalry between the children who conform and those who are not close to the teacher.

C. Hostile Competition Climate: In its extreme form everybody is whipped into ruthless competition with everybody else. The result of this atmosphere is extreme uncooperativeness among members of the group. The more successful students may develop feelings of superiority, while students who cannot meet the standards have feelings of shame or defeatism.

D. Group Pride Climate: Within proper limits this climate may be conducive to a wholesome feeling of "we-ness." In its extreme form feelings of group vanity and conceit may result. The individual who does not meet all the requirements of group loyalty may be made an outcast subject to group persecution.

Factor IV. *Mistakes in Organization and Group Leadership.* During the period of adolescence there is need for the gradual emancipation of the child from adult domination. Some of the features of the school organization which disregard this need of youth are (a) too much autocratic pressure; (b) too much organization; (c) group organization out of focus with the age, maturity, background, and special needs of the group.

Factor V. *Emotional Strain and Sudden Change.* A member of a group may become unduly excited about examinations, athletic contests, or community events. Boredom resulting from the failure of the teacher to provide exciting or interesting work is even more damaging to group morale. Sudden changes in behavior requirements, techniques, and leadership frequently result in emotional upsets of both individuals and the group.

Factor VI. *The Composition of the Group.* Frictions and discipline problems may develop unless children are grouped on the basis of criteria relevant to group life. Some of the considerations which are important in grouping pupils are age, physical and social development, home acceptance or emancipation, intelligence, knowledge, social-economic background.

4. METHODS OF DISCIPLINE

Pupil Growth in Social Responsibility.—The social forces present within each school group can be utilized to give children actual experience in making decisions on a cooperative basis. Participation in the democratic process of accepting and sharing responsibility for the general welfare is basic to living in a democratic society. Each individual should fully recognize that his actions are not only significant to himself but that they affect the welfare of other members of a group.

In many areas of school life students may properly be given opportunities to make individual choices and assist in making group decisions. The elective system enables individuals to select many courses in terms of their own purposes and plans. In many schools students in high school classes choose projects and make their own plans under teacher guidance for carrying the tasks through to completion. They make decisions in regard to sources of information, study procedures, and methods of presentation and evaluation of their own activities. The main value of pupil participation in school government is that it provides opportunity for the pupils to make judgments of civic and moral values. The number of the decisions is of less significance than the manner in which they are made. The crux of the matter is that intelligent, democratic processes are utilized.

Pupil Participation in School Management.—Perhaps no other agency in the high school presents a more striking contrast between modern methods of pupil control and traditional ones than the student council. Student cooperation and participation in school government are based upon a concept of proper pupil-teacher relationship that is far removed from the authoritative-teacher role. However, the difference is one of degree and may not be as great as it appears. Student responsibility is a sham and pretense unless the teacher is thoroughly convinced that adolescents are capable of developing a system of inner controls of behavior which is superior to any system of external controls that can be devised by teachers or parents.

Basic, therefore, to the effective operation of any plan of pupil self-control is belief on the teacher's part in the ability of high school pupils to direct their own activities in an intelligent manner. The assumption on the part of pupils of such responsibility should be a gradual process, preceded and accompanied by careful guidance in procedure and evaluation of actual problems. Young people resent the hypocrisy of make-believe problems.

In many schools students have assumed responsibility for their behavior in passing to and from classes, in study halls, in conducting club activities, and in many aspects of the athletic program. The success of this participation is dependent upon intelligent teacher guidance, not teacher dictation or abandonment of leadership. Some of the *managerial* responsibilities which pupils in secondary schools assume are suggested by Douglass [4] as follows:

1. *Assemblies:* providing programs, presiding, making seating arrangements
2. *Study halls:* bookkeeping incident to pupil's leaving and entering, attendance, and so on
3. *Libraries:* bulletin boards, charging books, working out policies
4. *Social functions:* plans and details of arrangement and management
5. *Lockers:* assigning keys
6. *Lost-and-found service:* managing bureau, posting bulletins
7. *Book exchange:* plans and details of operating, care of funds
8. *Tardiness:* recording tardiness and administering excuses and admissions
9. *Fire and safety:* developing plans, managing drills
10. *Employment service:* planning and operating bureau
11. *Supervision of elections:* determining procedures and means of supervision
12. *Grounds and games:* planning policies and regulations
13. *Student clubs and organizations:* initiation, government, management

In many high schools some members of the eleventh and twelfth grades are designated as "Big Brothers" or "Big Sisters" for members of the lower classes. In the selection of these pupil advisers social leadership, neighborhood proximity, vocational and avocational preferences, and character are taken into consideration. The Big Brother or Big Sister in many cases becomes the ideal of the younger student. These advisers can be of great assistance in orienting and adapting younger students to various aspects of the school situation. Group meetings of the pupil advisers should be held frequently under the leadership of a teacher counselor for the purpose of exchanging ideas for improving the effectiveness of the program.

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[4] Harl R. Douglass, *Organization and Administration of Secondary Schools*, Boston: Ginn & Co., p. 288.

In some secondary schools students assume responsibility for their own behavior through participation in an honor system. The plan takes various forms with varying degrees of pupil autonomy and cooperation, the most common being that in which examinations are conducted without close teacher supervision. However, the plan may be extended to enable a student to study in any room he wishes without a special teacher permit or to leave study halls on his own volition.

Certain conditions or safeguards are essential to the successful operation of the honor system. Among the most important are the following:

1. Desirable standards of conduct should be formulated, discussed, and accepted by the students themselves.
2. A continuous program is necessary for maintaining a school-wide tradition of individual self-control and school loyalty.
3. Privileges should be withdrawn from individuals and groups who fail to exercise self-control and self-direction.

Punishment Related to Pupil Adjustment.—In the preceding sections of this chapter, adolescent conduct has been considered as the resultant of the interaction of the individual and his environment. Considerable emphasis has been placed upon the need for arranging and maintaining a social environment which is conducive to desirable behavior of the individual. It has been estimated that not more than 10 per cent of the disciplinary problems in schools can be attributed solely to the personal case history of the individual.

Pending the arrival of more nearly ideal conditions in home, school, and society, it is not realistic to expect that all forms of adolescent maladjustment can be prevented. If an individual's overt behavior is detrimental to his own best interests and those of the school group, it is necessary that his behavior be adjusted directly and immediately. While the student's misconduct may have its origins in the general situation, the form of his behavior is usually specific and individualistic. It is, therefore, impossible to formulate a list of suggestions which a teacher may follow as a general prescription. There are a few basic considerations, however, which teachers may find helpful in dealing with individual violations of good behavior. They are as follows:

1. *Slight irregularities of conduct* should not be taken too seriously. Strict and unwavering adherence to arbitrary standards of behavior without consideration of the intentions of the individual or the causative factors in the situation provoke feelings of resentment on the part of pupils. The teacher thus destroys his chance to assist the student in making a satisfactory adjustment.
2. Punishment is for the purpose of *assisting the individual* to make a more satisfactory adjustment to the school situation. The practice of making the punishment an example and a warning to other pupils is psychologically and ethically unsound.
3. Before any punishment is administered, *investigate the causes* of the individual's misbehavior. There may be possibilities of adjusting the curricular materials or modifying instructional procedures to make them more significant and challenging to the student.
4. In the event that the student's misbehavior appears to be related to his failure to adjust to the regulations imposed by the school organization, *consider the need of modification of the organization* in terms of whether it promotes or hinders the mental health of pupils.
5. In considering possible courses of action, select the treatment or form of punishment which appears to have the *greatest long-range value* in preventing recurrence of the individual's behavior.
6. The enforcement of rules against inattention, whispering, and the like is a poor substitute for *classroom situations that are vital and interesting* to students.
7. Be certain that in punishing the individual, he is not being made the victim of *a general unsatisfactory group attitude.*
8. The *monotony of one type of classroom procedure* should be avoided. Different topics present opportunities for utilizing a variety of teaching methods.
9. In teaching, *minimize the difficulty of abstract ideas* by application of the knowledge to actual life situations.
10. *Certainty of punishment* is a greater deterrent to wrongdoing than harshness.
11. The severity and the form of punishment should be in terms of the *seriousness of the offense* and also with due recognition of the *needs of the offender.*
12. *The immediacy of the punishment* is important in assisting the child to establish the proper connection between misbehavior and

punishment. However, a careful consideration of the causes and consequences of the misbehavior prior to the punishment is essential.

13. Punishment on the installment plan is usually undesirable. Once a difficulty has been adjusted satisfactorily, *avoid referring to the matter again.*
14. *Do not hold grudges* against pupils. The mental health of the child is not promoted by his belief that "the teacher has it in for me."
15. *Get all the facts* relevant to the incident of misbehavior before disciplinary action is taken.
16. The teacher should *accept the facts* in a case of misbehavior and make the decision as to the best course of action without the demonstration of anger, irritation, etc.
17. *Publicity should not be given* to a student's misbehavior. The information about the incident should be used in a confidential professional manner.
18. *Methods of discipline should be consistent* within a given classroom, and also from one classroom to another.
19. A deterrent to pupil misbehavior lies in the *effective handling of classroom routine*—checking pupil attendance, collecting and distributing papers, and arranging instructional materials for prompt and expedient use.
20. *Alertness on the part of the teacher* in regard to what is happening in the classroom at all times is essential. Eyes that see and ears that hear what is transpiring prevent incipient misbehavior from becoming serious disaffection.
21. The possibility of pupil inattention in the group discussions and recitations is greatly minimized if the recitation is truly *a clearing house for ideas.* A repetition of ideas with which pupils are already familiar is not conducive to genuine interest. When pupils cannot hear the pupil who is reciting because of the poor seating arrangement of the class or because of his failure to speak in audible tones, they have a tendency to lapse into habits of inattention and indifference.
22. Pupils who are given *a part in planning, managing, and appraising* their classroom activities, their club meetings, and their dances and parties have less inclination and time for misconduct.
23. Announcing in advance what will happen in the event of pupil misbehavior (*threatening*) precludes the possibility of treatment in terms of the needs of the offender. The causative factors are also ignored.
24. *Punishment of individual violations* of good behavior should be the rule, not punishment of the entire group.

25. *Avoid attributing misbehavior* to an individual until you are certain that he committed the offense.
26. The form and method of punishment should be such as to *enable the individual to retain his self-respect.* The pupil's belief in his own integrity is basic to any effort of constructive self-improvement. Treatment of misconduct should seek to *inspire the pupil to right action* rather than merely to restrain him from misconduct.

Character-building Agencies That Cooperate with the School.—In addition to the school, there are various agencies in the community which have character development of youth as one of their main objectives. Especially active in this respect are the Boy Scouts, Campfire Girls, Girl Reserves, Hi-Y, 4-H Clubs, and Junior Red Cross.

With resourceful leadership these agencies exercise a wholesome influence on the youth who participate in their activities. The informality of the programs makes a strong appeal to young people. In the performance of many tasks in their meetings and camps, the youngsters are presented opportunities to participate in cooperative social endeavor. Children who are inclined to be irresponsible and thoughtless of others learn to respond to the needs of the group. The individual discovers that it is frequently necessary to subordinate his personal desires for the welfare of the group. In the performance of tasks for the general welfare, the youngster develops a sense of belonging and feelings of security and personal worth—he gains the feeling that he counts in the scheme of things.

The tone and quality of the activities are largely dependent upon the leader. Many teachers welcome the opportunity to serve as leaders in these organizations. They gain insights into the thinking and behavior of youth which are difficult to attain in the school situation. All the leaders of these organizations, however, should not be teachers. Young people need the experience of coming into contact with leaders from various walks of life, with different attitudes and outlooks. Every teacher, moreover, can encourage young people to become members of some one of these organizations, and he can cooperate with their leaders in making the programs of each organization more vital in meeting the needs of youth.

"Don'ts" in Discipline.—The positive aspects of discipline have been emphasized throughout this chapter. In the presence of a thoroughly constructive program of school discipline, the following list of suggestions may appear trivial. There is abundant evidence, however, to indicate that many teachers encounter difficulty in avoiding many of the errors in the list. These suggestions are stated in a dogmatic manner, but experience has proved them to be sound in the great majority of disciplinary cases. In the event that an exception is made, the teacher should be certain that it is fully justified in terms of the welfare of the individual and the group.

Some of the most serious errors to be avoided in general practice are:

1. Don't attempt to teach a class without planning the lesson.
2. Don't overemphasize or neglect important classroom routine matters.
3. Don't neglect the physical environment of the classroom.
4. Don't begin classwork until the class is attentive.
5. Don't fail to know what is going on in the classroom at all times.
6. Don't punish for an offense until you know all the relevant facts in the case.
7. Don't keep a pupil in at intermission or after school except for the purpose of having him make up work he has failed to do.
8. Don't use sarcasm or ridicule.
9. Don't pose or assume an unnatural "hard-boiled" attitude.
10. Don't hold grudges against pupils.
11. Don't use punishment of one pupil as an example for others.
12. Don't make threats.
13. Don't vacillate between harsh and easy-going methods.
14. Don't reveal feelings of anger or irritation.
15. Don't punish until you have your emotions under control.
16. Don't scold or nag.
17. Don't call pupils names, e.g., "dumbbell," "smarty."
18. Don't assign school tasks as punishment.
19. Don't use demerits.
20. Don't reduce pupil's mark in course as punishment. (The mark should represent achievement in course.)
21. Don't use corporal punishment.
22. Don't send the pupil to the principal's office except as a last resort.
23. Don't send the pupil out into the hall as punishment.
24. Don't humiliate the pupil by words or actions before other pupils.
25. Don't administer punishment before other pupils.
26. Don't take slight irregularities too seriously.
27. Don't tug at the child's heartstrings.
28. Don't "tattle on" the child.
29. Don't punish the child to give yourself emotional relief.
30. Don't accuse the child of suspected misbehavior.
31. Don't punish on the installment plan.
32. Don't punish the entire class for the offense of one member.

33. Don't argue with an offending pupil in regard to the offense or the punishment.
34. Don't force apologies.
35. Don't engage in a "major fight over a minor issue."
36. Don't ignore the "group climate" in punishing an individual pupil.
37. Don't base your disciplinary policies on prohibitions; instead emphasize what the pupil *can* and should *do.*

Questions, Problems, and Exercises

1. To what extent can adolescents assume responsibility in an intelligent manner for their own behavior?
2. What is the relation of classroom routine to discipline?
3. What inferences can be drawn from the fact that 90 per cent of the adolescents who were returned to their homes in a recent year by the Bureau of Missing Persons of the City of New York stated that they left home to escape school?
4. Describe an effective plan of pupil participation in school government.
5. Defend or refute this statement: "The fundamental reason why children do not act right is because they do not have the conditions for right action."—Francis W. Parker.
6. What contribution can the mental hygienist make to the solution of problems of pupil maladjustment?
7. What are the implications for discipline in the view of some psychologists that human behavior patterns are specific rather than general?
8. Outline a plan of obtaining information in regard to a pupil whose behavior makes him a problem (i.e., plan a case study).
9. Given a classroom situation, how would you judge the effectiveness of the teacher's methods of discipline?
10. To what extent do problems of classroom discipline have their origins in out-of-school situations? in the total school situation?
11. List types of misbehavior for which responsibility may be attributed to the individual pupil.
12. Do you consider the ability to maintain good discipline a valid criterion of teacher efficiency? Justify your answer.

Chapter 7

PLANNING FOR TEACHING

I. THE IMPORTANCE OF PLANNING

The value of intelligent planning has been demonstrated in many fields of human endeavor. As an activity becomes more complex and consequential, the need increases for preliminary thoughtful consideration of its character and significance. Whether the effort is that of an individual or of a group, the outcomes are dependent in no small measure upon judicious forethought. The successful attorney at law, business man, football coach, and radio program arranger formulate plans for their work in considerable detail. Many of the difficulties of human society arise from unwise or inadequate planning. Nations that fail to comprehend the welfare of all classes of individuals within their boundaries are haunted by internal chaos and strife. War, rather than peace, may in the future be the normal pursuit of man if he continues to fail to plan as zealously or prudently for peace as he does for war.

Reasons for Planning for Teaching.—Teaching is one of the most complex and significant of man's endeavors. It is complex because of the many intangible values and numerous human factors involved. Its significance lies in its power to shape human destiny for good or ill. No teacher who is mindful of the trust placed in him can be content with anything less than excellence in his work. Although perfection in teaching is achieved by few teachers, it is an ideal worth seeking. It is doubtful that any teacher ever failed to become a better teacher by planning his teaching in advance. It is likewise doubtful that impromptu thought and action ever resulted in peak teaching performance. Planning:

1. Gives the teacher a clearer comprehension of the objectives of secondary education and the relationship of his teaching to those objectives.
2. Helps the teacher clarify his thinking about the distinctive contribution his teaching subject makes to the objectives of education.

3. Tends to insure that the relative values of various instructional materials and procedures are given proper consideration.
4. Serves to make the teacher more resourceful in recognizing pupils' needs, utilizing pupils' interests, and providing more satisfactory means of pupil motivation.
5. Reduces the amount of trial and error in teaching through a better organization of curricular materials, use of more appropriate methods, and greater economy of time.
6. Wins respect of pupils. They appreciate the teacher who is a learner with them and makes preparation for his work as he expects them to do.
7. Presents one of the teacher's best opportunities for continuous personal and professional growth.
8. Contributes to the teacher's feeling of self-confidence and self-assurance.
9. Aids the teacher in recapturing waning enthusiasms, thereby insuring a fresh, up-to-date presentation of instructional materials.

Why Planning Is Neglected.—Surveys have revealed the fact that the majority of teachers in American high schools have accepted instructional planning as a prerequisite to effective teaching. More amazing, however, is the disclosure that all high school teachers do not recognize the need for planning. The confusion and doubt in regard to planning which seem to exist among many teachers and its outright rejection by others can be traced to the following causes:

1. The formality of planning, resulting from acceptance of the five formal steps in teaching suggested by Herbart. Teacher-training institutions formerly insisted that written lesson plans be organized in terms of the Herbartian teaching formula. It has been difficult to dispel that influence, even though the concept of the teacher as a mere manipulator of subject matter has been superseded by the idea that the child is the focal point in teaching.
2. Overemphasis upon the form of the lesson plan, resulting in little or no flexibility in use.
3. The requirement that lesson plans be made according to certain specifications in order to serve the purposes of supervisors in checking up on the work of the teacher.
4. The heavy teaching schedule of many high school teachers, which leaves little or no time for any but superficial planning.
5. The apparent success of planless teaching. Many teachers have achieved a fair degree of success, as teaching is measured, without planning.
6. Willingness of many teachers to follow the line of least resistance and thus accept mediocrity.

In view of these considerations, it is to the eternal credit of thousands of conscientious teachers that they have devoted so much of their time and energies to planning their teaching.

2. Types of Plans

Instructional plans may be classified in several different ways. One basis for classification of plans is their scope. Another method considers the persons doing the planning.

Scope of Planning.—The scope of adequate planning is as broad as the work of the teacher. Every aspect of his work requires thoughtful consideration in advance. Broadly conceived, planning involves the curriculum, guidance, extracurricular activities, pupil appraisal, and methods of procedure. The discussion in this chapter will be limited to classroom procedures.

Persons Participating in Planning.—On this basis planning may be classified as (1) group planning with other teachers, (2) pupil-teacher planning, and (3) individual teacher planning.

One of the most significant trends in teaching in the secondary school is *cooperative planning* of activities by the teachers. In high schools which have the "core"[1] type of curriculum, the need has been recognized for preparing "resource units" as advance guides. In the Denver high schools, the pooled judgments of a great many teachers are used to build a "frame of reference" for the individual teacher's use in teaching a unit of the core curriculum. The resource unit, which should be distinguished from the teaching unit of the individual teacher, is merely suggestive in content and arrangement. It constitutes an outline of the broad scope of the unit prepared on the basis of the combined judgment of a group of teachers and the director of instruction in the secondary schools. The chief features of a resource unit prepared for use in the junior high schools of Denver[2] are as follows:

I. Title of unit
II. Introduction
    1. Purpose of the unit
    2. General suggestions for teaching the unit

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[1] The core curriculum may be defined as a unified series of educative experiences which are designed to meet the basic common needs of all pupils.

[2] *The Freedoms We Defend and Seek: A Unit for the Denver Junior High Schools*, Denver: Department of Instruction, Denver Public Schools, September, 1943.

   3. The use of reading references and other materials
      (a) Use of the library
      (b) Use of auditory and visual aids
   4. Evaluation

III. Launching the unit—suggestive approaches

IV. Problems to be considered, with a list of understandings, desirable changes in pupil behavior, activities and references

V. Resource materials
   1. Books
   2. Pamphlets
   3. Periodicals
   4. Visual and auditory aids
      (a) Charts
      (b) Films
      (c) Pictures
      (d) Posters
   5. General reference materials
   6. Textbooks

VI. Evaluating the purposes of the unit
   1. Attitudes scale
   2. Test of concepts

VII. Possible new units to follow

A good illustration of the suggestions for teaching the unit is found in Section III of the outline above. The suggestions are as follows:

> The unit may be launched in several different ways, any of which should be selected according to the interests and capacities of the group. Some of those suggested are as follows:
>
> 1. Showing a film such as *Servant of the People* or *Sons of Liberty* to arouse interest in the principles of freedom and liberty which the United Nations are defending.
> 2. Opening a class discussion on the reason for wars and how they can be controlled.
> 3. Making a class survey of the number and kinds of radio programs and newspaper articles dealing . . . with postwar plans and comparing with this the amount of space given to other interests to discover the place which war and postwar plans have in the lives of people in the United States.
> 4. Giving the Scale of Beliefs test (P.E.A. 4.4-4.5) or the Scale of Beliefs test reproduced in the section on "Evaluating the Unit" and following up with a class discussion of vital areas of belief concerning the war and the peace.
>
> . . . .

6. Making a survey of the class, the school, and the community to discover what the group thinks the word *democracy* means.

Cooperative planning by teachers not only serves the purpose of providing advance blueprints of a general character for the use of the individual teacher but affords also a valuable experience in mutual professional endeavor. Under the supervision of a competent director of instruction, group planning can serve as an effective means of in-service education of teachers.

Pupil Participation in Planning.—Another noteworthy development in modern secondary education has been the inclusion of the interests and preferences of adolescents in the teacher's plans for teaching. The acceptance of the idea that the learner should be taken into account has been difficult for many teachers. The theory that the adolescent is immature and therefore not capable of participating in the making of important decisions, even though the decisions affect him directly, appears unsound in the light of our present knowledge of adolescent psychology. Likewise untenable is the narrow concept of democracy upon which many school practices have been based. Democracy implies the opportunity for making choices and assuming responsibility for the results of these choices. It is essential that the teacher have an abiding respect for the personality of the child. The teacher should also have a strong faith in the power of education to make desirable changes in the thoughts and actions of the individual.

The most convincing evidence, however, in regard to the advisability of pupil participation in planning various school activities comes from schools in which the practice has been put into effect. Pupils have demonstrated their ability and willingness to assume intelligent responsibility for their own acts. Pupil morale has been enhanced. Problems of pupil control have greatly decreased, and conditions for satisfactory learning have been established. The teacher who encountered difficulty in leading pupils to accept her purposes as worthy has discovered that shared pupil-teacher purposing is an open sesame to success.

The cooperation of pupils in planning activities may be used in practically every aspect of the life of the school. In matters pertaining to school citizenship, the curriculum, social activities, and classroom procedure the pupils' active participation has been utilized. In instructional procedures involving the project method, pupils have participated in setting up objectives of the project, selecting topics for study, choosing curricular materials, making decisions in regard to the methods of study, selecting the manner of presentation of the findings of their study, and evaluating the success of their various activities in connection with the project.

The leadership of the teacher is essential in guiding these activities into desirable channels but not dictating to the pupils. Many teachers have exercised this guidance function by suggesting lists of projects or readings from which pupils make choices of activities. Other teachers have encouraged pupils to suggest their own lists of topics. A combination of these two procedures by cooperative pupil-teacher planning as the work proceeds is perhaps the best plan.

Teacher Evaluation of Pupil-Teacher Planning.—Teachers who have used the method are of the opinion that it has certain limitations as well as many advantages. Weaknesses of the plan reported by teachers in one school [3] included the following:

1. It is difficult to get all pupils to help in planning.
2. Lazy pupils grow lazier.
3. Disciplinary problems arise because liberty is given too early; some pupils come to feel that they should do only as they please.
4. Pupils have little idea of real needs.
5. Pupils have too meager a background to select units of work wisely.
6. It is difficult to plan far enough ahead to order films and other visual aids.
7. Teachers are not resourceful enough.
8. There is a lack of materials.
9. Teachers lack a feeling of security.
10. Pupils frequently lack a plan of action in new situations.
11. Time is wasted.

The advantages of pupil-teacher planning given by teachers who have used the plan are:

1. Encouraging initiative, originality, and independence in pupils
2. Becoming a means of answering immediate needs
3. Offering excellent opportunities for guidance
4. Providing motivation
5. Making for democratic cooperation and social responsibility
6. Developing foresight and resourcefulness
7. Giving a chance for individualization
8. Developing more interesting people
9. Teaching a technique for making choices
10. Encouraging appreciation for the abilities of others, and for opportunities within the school

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[3] *Thirty Schools Tell Their Story,* Adventure in American Education, Vol. V, pp. 183-184.

3. Planning the Work of the School Term or Year

In many high schools this type of plan is synonymous with the plan of the course in a given subject-matter field. However, it may be much more inclusive than a subject-matter course. If the curriculum is organized into broad "trunk lines" leading to definite objectives of secondary education, the plans for traveling one of these trunk lines toward an objective may involve a great variety of pupil activities and curricular materials, blended and fused together into a series of educative experiences.

The teacher who plans to act as guide on one of the educational trunk lines should do the following:

1. Fix the goal or objective thoroughly in mind.
2. Understand clearly the part that achieving a particular goal plays in the intellectual, emotional and physical development of the adolescent.
3. Make a careful inventory of the mental, social and physical qualifications each child in the group possesses for the experience.
4. Anticipate the probable difficulties which may be encountered, noting well the by-paths which may lead to futility of effort.
5. Select the materials and activities which make the optimum contribution to the attainment of the goal.
6. Organize these materials in a manner calculated to obtain the greatest possible amount of interaction between each learner and the features of the changing environment along the journey toward the goal.
7. Consider plans for pupil-teacher measurement (evaluation) of the group's progress toward the goals.

If the work of the year is synonymous with that of a course in a subject-matter field, the task of planning the organization and presentation of a body of familiar material is comparatively simple. The first step in planning a course involves a decision in regard to the objectives of the course. This should be followed by a consideration of the scope of the course in terms of the objectives. The third step consists of organizing the content around significant problems or into units of child interest. The approximate time allotment for each of the units should be made in terms of its relative value in attaining the objectives of the course. Finally, general plans should be made in regard to the methods of teaching each of the units. Basic to all these decisions is a consideration of the needs, interests, and abilities of the pupils who are to be taught. Less important perhaps, but deserving of consideration in formulating the long-term plan, are the inventories of available equipment, supplementary reading materials, and opportunities for guided field trips to obtain first-hand information on each of the units.

Planning the Large Component Parts of the Course.—It is usually feasible to make subdivisions of the course for the purpose of establishing a series of more immediate and definite goals than the complete course affords. The work of the semester or year may be divided in one of several ways. It may be (1) organized around a *series of problems or projects,* (2) divided into several coordinate subdivisions of subject matter or *subject-matter units,* (3) organized around some central theme of child interest and setting up *experience units,* or (4) divided in terms of intervals of time, i.e., by the week or the month. Regardless of the basis upon which the division is made, planning is essential.

If the work is organized into projects, the teacher should become familiar with the various methods of selecting and teaching projects. In this connection it is well to remember that pupil purposing is the essence of the project.

The unit plan of organizing instructional materials does not necessarily involve the use of the unit method in teaching the unit. The materials may be organized into subject-matter units and presented to the class as a series of daily recitations. However, the utilization of the unit method in teaching the unit is advisable. The experience type of unit, which represents a more significant reorganization of instructional materials, makes the unit method of teaching imperative.

The following suggestions for planning to teach a unit may be suggestive:

1. Decide upon what basis the unit is to be chosen, e.g., its contribution to knowledge of a subject-matter field, its interests for young people, its possible influence on pupil behavior (present and future).
2. Consider the part the pupils are to have in the selection of the unit.
3. If pupils participate in the selection of the unit, consider the method of participation.
4. Formulate a list of specific objectives of the unit.
5. List possible approaches to the unit and select those which appear to be the most feasible in terms of pupils' present knowledge, interests, and abilities.
6. Prepare a typewritten or mimeographed assignment or work sheet for each pupil. In the assignment include:

  - (a) Statement of the significance of the problem
  - (b) Specific instructions in regard to individual pupil and group activity during the study or work period
  - (c) Sources of study materials
  - (d) Form of organization of materials studied, e.g., written reports, notes for oral reports, panel discussion, or dramatization
  - (e) Amount of time available for the study of different aspects of the unit
  - (f) Basis and methods of evaluation, e.g., if tests of progress or achievement tests are to be given, reveal number and form of tests.

7. Consider possibilities of correlation with other units or subjects and application of knowledge to other situations.
8. Plan methods of pupil-teacher evaluation of outcomes.

4. Daily and Weekly Planning

Weekly Lesson Plan Books.—In many schools each teacher is supplied with a commercially published lesson plan book. Spaces are provided for the teacher to record a brief statement of his plans for teaching each day for a period of a week in advance. In reality, the plan book does not require weekly plans but rather a series of brief outlines for five daily plans prepared a week in advance. In many of the plan books spaces are provided for the teacher to write a statement of the aims, assignment, teaching materials, and approaches for each subject for each day of the week. While this planning in advance has considerable merit, it is more a brief memorandum than a plan. The teacher should recognize that this type of planning does not obviate the necessity of making more detailed lesson plans.

Planning the Daily Work.—A well-established principle of psychology is that, everything else being equal, the more immediate the goal the more impelling is its influence. The remote goals of the large learning units should be supplemented by several immediate objectives. The high school pupil, or even the graduate college student, who postpones his study until the night before he is required to submit his report is a familiar character to teachers. The daily recitation, in spite of its limitations, has the distinct advantage of providing a series of immediate goals for the learner. The work of the daily class period should be related to the larger objectives of the unit and the course. There is nothing inherent in the daily recitation to make it an isolated activity. The best assurance that the work of the daily class period will be related to the other important aspects of the course is careful planning of each day's work.

If the daily class period includes recitation and directed study, the plan should provide for both of these activities. The teacher's work is not ended when the recitation is concluded. Teacher leadership wisely exercised during the directed study period may be more essential to pupil learning than are the activities of the recitation period.

Planning for the directed study of pupils involves a consideration of the following:

1. Physical environment favorable for pupil study
2. Accessibility of study materials
3. Means of motivating pupils in their study
4. Diagnosis of learning difficulties of individual pupils
5. Procedures in directing the study of individual pupils, particularly slow-learning and superior pupils
6. Methods of eliminating difficulties common to the group
7. Means of checking on the efficiency of the pupils' study habits

Planning for the Daily Recitation.—In planning for the portion of the class period which is devoted to the recitation, the teacher should ask himself the following questions:

1. Why am I going to teach this lesson? (*Purposes*)
   Ans. To induce activities which will develop certain:
   - (a) Abilities
   - (b) Tastes or ideals
   - (c) Knowledge (learning, information, scholarship)
   - (d) Skills or powers (discernment)
   - (e) Attitudes ("mind set")
2. What am I going to do? (*Assignment*)
3. How am I going to do it? (*Method*)
   - (a) How shall I find out what the pupils already know about this subject? (*Survey of preparation*)
   - (b) What past experience shall I draw upon to introduce the new? (*Arousing desire or motivation*)
   - (c) How am I going to teach the new? (*Method; includes consideration of materials, references, pivotal questions, etc.*)
4. How shall I check the results of my teaching?
   Ans. By using one or more of the following:
   - (a) Summary
   - (b) Review
   - (c) Discovery of new problems
   - (d) Measurement:
     - (1) By individual pupil self-evaluation
     - (2) By teacher evaluation

Characteristics of an Effective Daily Lesson Plan.—The answers to the preceding questions can be organized into a plan possessing the following essential characteristics:

1. Worthy attainable aims (both general and specific) clearly formulated
2. An assignment that provides for pupil motivation, includes definite learning exercises, and contains specific instructions for study
3. Good selection and arrangement of instructional materials for use in attaining the objectives
4. Carefully chosen procedures, in considerable variety and detail, for effective use of the materials
5. Indication of the tentative amount of time to be devoted to each part of the lesson
6. Provisions for evaluating pupil progress
7. Applications of materials to school and out-of-school situations noted
8. Correlation of topic with other topics of the course planned
9. Bibliography of reading materials for pupils and teacher and other supplementary materials
10. Form of the plan, determined in terms of its possible optimum use
11. Suggestions for revision of the plan, added after actual use

Formulation of Aims.—There is general agreement among authorities on methods of teaching that a plan for teaching should include a statement of *aims*. Such a statement is an essential part of all types of lesson plans. The aims assist in defining the means, procedures, and ends of instruction. A basic requisite for planning instruction in the high school is a clear conception of the *objectives* of education in general and those of secondary education in particular. The teacher should be cognizant of the function of secondary education in the mental, emotional, social, and physical development of the adolescent. Equally important is the need for a clear comprehension of the distinctive *values* of each of the various and multiple aspects of a program of secondary education in the total education of youth. The acceptance of these larger objectives is significant to the extent that they are translated into the specific objectives of each subject.

Inclusion of a topic in a course of study must be justified in terms of desirable changes in the thinking and overt behavior of pupils which will probably result. A statement of aims, both general and specific, should be formulated for every recitation. The inclusion of the general aim is necessary to give proper perspective to the work. Specific aims are necessary to focus attention on the content and procedures of the daily work which are directly related to the ultimate objectives. The specific aims should have not only a relationship to the general aim but also a close interrelation among themselves.

The division into teacher's aims and pupils' aims in planning is untenable. They should be the same even though relative emphasis upon the various aims may differ as between teacher and pupil. A sharing of pupil-teacher purposes is essential. In order to exercise responsible educational leadership, the teacher should devise a list of aims in advance. These aims should serve as a point of departure for the blending of pupil-teacher purposes as the work proceeds. The respective roles of pupil and teacher in the learning situation may be different, but their activities should be moving in the same general direction. It is likewise imperative for both the teacher and the pupils to recognize the reasons for a particular course of action. Otherwise it will be a case of the blind leading the blind.

Criteria for the selection of aims are as follows:

1. Aims should be *worthy* in terms of accepted educational philosophy.
2. Aims should be stated in terms of *child development* rather than subject matter. Desirable changes in pupils should be emphasized, for example:
   (a) To assist pupils in developing the habit of ——————
   (b) To lead pupils to appreciate ——————
   (c) To teach pupils to interpret ——————
   (d) To enrich ——————
   (e) To develop the powers of pupils to discriminate between —————— and ——————

   Aims which make subject matter an end within itself usually read as follows:

   (a) To name ——————
   (b) To teach pupils to know ——————
   (c) To inform the pupils in regard to ——————
3. Aims should be *attainable* in terms of the capacities and interests of pupils. One of the most stupid things teachers do is to attempt to compel pupils to learn content beyond the limits of their abilities.
4. Aims should be *delimited* by the availability of instructional materials and time allotment.

5. Aims should be *definite* enough to determine the selection of content and procedures.
6. Aims should be *specific* in that they are directed toward the satisfaction of a need recognized by pupils.
7. Aims should be stated in terms of action leading toward *desirable outcomes*. Under ideal conditions, aims and outcomes are synonymous. However, aims are usually less specific than outcomes.[4]
8. Aims should be *interrelated*.
9. Aims should make provision for *concomitant learnings*.
10. Aims should be *dynamic*.

The Selection and Organization of Content.—The content represents the means utilized in attaining the aims. Content should be selected on the basis of its contribution to the realization of the aims. If pupils' capacities, needs, and interests are taken into consideration in selecting the aims, only that content which has a direct relationship to these aims can be justified. Regardless of its significance, the value of indirectly related content is dependent upon direct content and its method of presentation. The teacher should recognize that concomitant learnings are usually unsatisfactory if the direct learning is inadequate. Intelligent planning is the best assurance that the content will be chosen in terms of the established aims of the lessons.

Good reasons can be given against the fixing of subject matter too long a time in advance or without pupil participation in the process. The decisions of the teacher in regard to content do not preclude the possibility of utilizing a procedure sufficiently flexible to account for pupil purposes. The broader perspective of the teacher can be combined with the immediate interests of pupils to achieve the objectives with the minimum of lost time and effort.

In the selection of content the teacher should decide which materials are available that are pertinent to the aims. After the content has been selected, it should be organized into a general outline with proper regard to the principles of educational psychology as well as those of logical arrangement. The outline should contain all the main principles, facts, concepts, and illustrations that are to be developed or discussed in class. The content should not be limited to that of the textbook but should be supplemented by materials from collateral readings for purposes of clarification and elaboration.

In planning the organization of the content, it may be desirable to depart from the order of the textbook. The material may be organized around a few central problems or pivotal questions rather than follow the logical organization of the textbook. The focal point of child interest should serve as the center for the coordination of content.

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[4] L. T. Hopkins, *Curriculum Principles and Practices*, pp. 37-38.

Planning the Procedures.—Planning the classroom activities of pupils and teacher involves careful consideration of many procedures. Basic to all decisions in regard to directing learning in the classroom is the learner. Sound procedure utilizes *pupil interest* as a point of departure in enriching pupil experiences. The possible approach to the topic should be planned to serve the purposes of *pupil motivation.* Provision should be made for utilizing *appropriate illustrations* and relating the present activities to the previous experiences of pupils. Proper *variety* in classroom method is one of the most effective means of providing for individual differences among the members of a high school class. The directed study period presents splendid opportunities for the teacher to assist individual pupils in acquiring *effective study habits.* Pupil difficulties can be anticipated, and plans made for their elimination. The recitation period may be devoted to general group activity, or the class may be divided into special interest groups, or pupils may work individually on special problems and report the results of their study to the entire class.

Planning the daily lesson entails making decisions in regard to the various activities of both teacher and pupils. To employ more than one type of procedure in each recitation is desirable.

If one type of method, such as the question-answer, is to predominate, the pivotal questions should be formulated in advance. The beginning teacher may find it desirable to incorporate a rather complete list of questions in the daily lesson plan. If the discussion method is to be used, with the teacher serving as discussion leader, he should make notations of the main points to be emphasized. If pupils are to assume the leadership, pupil-teacher planning is essential. The instructional materials, including reading references and equipment to be used, should be selected and arranged in proper order. Different types of pupil responses should be provided for in the plan. These responses may take the form of summaries of the content by individual pupils, panel discussions, dramatizations, debates, individual oral or written reports, or oral or written answers to questions by the teacher.

The assignment for the subsequent day deserves careful planning in order that pupils may know not only *what* they are to do, but also know *why* and *how* they are to do it. A sufficient amount of time at the end of the recitation period should be reserved for making the assignment. Many teachers have found it feasible to prepare a tentative time budget for the class period with suggestive time allotments for each phase of the work.

Planning for the evaluation of pupil progress and achievement involves decisions in regard to the type of tests, time and manner of administration, and the use to be made of the test results.

Form of the Plan.—Within recent years, an erroneous belief has been prevalent that, while planning is important, the form of the plan has little significance. The usefulness of the plan is dependent to a considerable extent upon its form. No one form may have optimum value for all types of recitations or teachers. Some teachers may find that a detailed written plan is the most desirable. Other teachers may prefer brief notes on content, procedures, and assignment. It is extremely doubtful that a teacher can obtain the maximum benefit without reducing the plan to written form. Since memory is ephemeral, the written plan is the most satisfactory record for future use. A plan revised after actual use provides an excellent basis for future planning.

The suggestions of Mossman[5] may be helpful in organizing a brief memorandum of preparation. Her recommendations are as follows:

1. Make an enumeration of the things one expects will happen, stated in the probable order of happening.
2. Make a memorandum of such details of subject matter as the convenience of the teacher may find valuable, because they are thus made immediately available.
3. Make a memorandum of assignments, of lists of illustrative or constructive materials which may be desirable and of reference(s) that may be useful.

A complete plan contains proper captions, indicating topic, date, grade or grade section, class period, and room number. This information makes the plan more valuable to the teacher for future reference. In large schools in which the plans of many teachers are submitted to one central administrative or supervisory office, the inclusion of this information is necessary for systematic and effective use of the plans.

The plan which follows is included to illustrate one of the most generally used forms.

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[5] Lois C. Mossman, *Changing Conceptions Relative to the Planning of Lessons.*

DAILY LESSON PLAN

General Topic: THE STRING CHOIR OF THE ORCHESTRA
Topic for Today: The Violin and Viola

Grade: IX	*Hour:* 10:00
Section: A	*Room:* 101
Teacher: Bertha Boulls	*Date:* January 15, 1947

PURPOSE:

General—To enrich the adolescent child's musical experience and appreciation of the instruments of the orchestra.

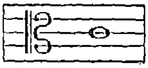
Specific—1. To recognize by sight and sound the stringed instruments (only those played with a bow)

2. To study the violin and viola, with particular reference to:
    (a) Their place in the modern orchestra
    (b) Distinguishing by sight and sound between the violin and viola
    (c) Developing appreciation of musical qualities of violin and viola

ASSIGNMENT FOR TODAY (MADE YESTERDAY):

1. Read Chapter I in the book entitled *Alice in Orchestralia* by La Prade. (Supplementary reading: *Orchestral Instruments and Their Use.*)
2. From your reading be prepared to answer the following questions:
    (a) What is the origin of the modern orchestra?
    (b) Name the instruments in the string choir of the orchestra.
    (c) Why is the string family considered the foundational group of the orchestra?
    (d) Why is the first violinist called the *concert master?*
    (e) Learn the meanings of the terms *harmonicas, mute, pizzicato, stopping,* and *vibrato.*
3. Bring clippings, pictures of instruments, and programs of the orchestra for the bulletin board of the music room.

<table>
<tr><th>CONTENT</th><th>PROCEDURE</th></tr>
<tr><td>1. <i>Outline of preview of modern orchestra:</i>
(a) Origin—17th century
(b) Original use—operas
(c) Father of orchestra—Monteverde
(d) Foundational instruments—strings
(e) Strings—violin, viola, cello, and double bass</td><td>1. Teacher gives a brief preview of lesson. Place on the blackboard before the class the following chart:
<table>
<tr><th><i>Violin</i></th><th><i>Viola</i></th><th><i>Cello</i></th><th><i>Double Bass</i></th></tr>
<tr><td></td><td>(A fifth lower than violin)</td><td>(An octave lower than viola)</td><td>(Almost an octave lower than cello)</td></tr>
<tr><td>G D A E</td><td>C G D A</td><td>C G D A</td><td>E A D G</td></tr>
</table>
Pupils copy chart in notebooks.</td></tr>
<tr><td>2. <i>Important terms:</i></td><td>2. <i>Important terms:</i> Take a violin and a bow and point to the parts as spoken of, so there will be no doubt as to the parts and terms.</td></tr>
<tr><td>(a) <i>Pizzicato</i></td><td>(a) Write the word <i>pizzicato</i> on the blackboard and say it over distinctly.</td></tr>
</table>

CONTENT	PROCEDURE
(b) Stopping, double-stopping	(b) Illustrate the method of placing the fingers to play the scale, and double-stops and harmonics.
(c) *Vibrato* (d) Harmonics	(c) and (d) Illustrate the *vibrato* and write the following terms on the blackboard: *stopping, double-stopping, vibrato, harmonics* and *mute*.
(e) Mute	(e) Place the mute on the bridge of a violin and illustrate the difference in the quality of tone.
3. *The violin:*	3. *The violin:* Discussion in which the following questions are answered:
(a) Great makers—Stradivarius	(a) Who were some of the most famous violin-makers?
(b) Importance of violins in orchestra	(b) Why is the violin considered the most important instrument in the orchestra?
(c) Characteristics: (1) greatest range of tones (2) greatest range of emotional expression (3) greatest facility of execution (4) greatest dynamic range	(c) What are the distinctive characteristics of the violin?
(d) Groups—firsts and seconds	(d) How are violins divided in orchestration?
(e) First violinist—*Concert Master*	(e) Why is the first violinist (Concert Master) second in command to the conductor during the playing of a symphony?
(f) Records of compositions in which the violin is the leading instrument: (1) *Humoresque* by Dvorak, a Bohemian (2) *Danse Macabre* by Saint-Saëns, a Frenchman	(f) Play records and have pupils recognize the distinctive notes of the violin, comparing the effects in the two compositions.
4. *The viola:*	4. *The viola:*
(a) Closely related to violin	(a) Play violin and viola to illustrate their qualities.
(b) One-fifth larger and a fifth lower than the violin	(b) Point again to the chart on the blackboard and illustrate on the piano that the viola is a fifth lower than the violin. Draw the viola clef and place C on the third line.
(c) Part notated on score as alto or viola clef	(c) 

CONTENT	PROCEDURE
(d) Distinctive tone-color—melancholy	(d) What is the distinctive tone-color of the viola?
(e) Importance in orchestra	(e) What does it contribute to the orchestra?
(f) Has literature of its own	(f) What are its possibilities as a solo instrument?
(g) Record of Beethoven's *First Symphony*	(g) Play the beginning measures of Beethoven's *First Symphony* until they can distinguish the strings, and the viola in particular. Repeat when necessary. "Listen for the viola and see if you can distinguish it."

ASSIGNMENT FOR NEXT DAY:

1. Read the sections in *Alice in Orchestralia* on the cello and double bass (the other stringed instruments played with a bow in the orchestra).
2. Answer these questions:
   - (a) What are the chief musical characteristics of the cello and double bass?
   - (b) In what respects do these instruments differ in tone-color from the violin?
   - (c) Can you identify the stringed instruments in Schubert's *Unfinished Symphony*? Play the record until you can do so.

TIME BUDGET:

Approximately ten minutes for the preview, twenty minutes for the violin, ten minutes for the viola and ten minutes for making the assignments.

EVALUATION OF RESULTS:

SUGGESTIONS FOR REVISIONS:

A serviceable arrangement of the main body of the plan consists of two vertical columns with the content listed in one of the columns and suggested procedures in the other one. Parallel to each item of content are notations of the procedures to be used in the teaching of that particular content. Another form which is used widely consists of three vertical columns. In the column to the left of the page is a list of specific objectives. The middle column is for the content to be used in connection with each of the objectives. In the third column on the right-hand side of the page a list of suggestive procedures is included.

The Use of the Plan in the Classroom.—There should be tangible evidence of planning in the teacher's activities in the classroom. As a result of the judicious use of the plan, the value of planning is revealed in the higher quality of classroom instruction. If the details of the plan are designed with facility of use in view, the skillful teacher can easily acquire the ability to use the plan to serve his purposes to the best advantage in the classroom. While there is little objection to fairly close adherence to a well-formulated plan, to rely too much upon its details is unwise. However, the chief values of intelligent planning can be dissipated by a disregard of the plan in teaching.

Deviations from the planned activities can be justified only when it is clearly evident that the best interests of the class can be served by content and procedures which were not incorporated in the original plan. Immediately after a plan has been used and while the class activities are still vivid in the memory of the teacher, any necessary modifications of the plan should be made. After this preliminary revision the plan should be filed for future use. Further adaptations will of course be necessary in terms of the interests, capacities, and needs of other groups of pupils.

Questions, Exercises, and Activities

1. What part should pupils have in planning the activities of the daily class period? the units? the entire course?
2. In cooperation with other members of a class committee, plan a source unit as a guide for planning by the individual teacher of a high school subject.
3. Write a detailed daily lesson plan in the subject you are interested in teaching.
4. Make a list of errors to be avoided in daily lesson planning.
5. How can the teacher anticipate pupils' reactions to a particular item of content or procedure?
6. In planning, how can the teacher anticipate and make provision for eliminating pupil study difficulties?
7. What are the chief bases for selection of content to be used in the daily class period?
8. What factors should be taken into consideration in decisions regarding the form of a daily lesson plan?
9. Write a statement of two or three paragraphs on "The Use of the Lesson Plan in the Daily Class Period."
10. Discuss the statement: If the work of a course is to be accomplished, it must be planned in advance and in considerable detail.

Chapter 8

DIRECTING THE STUDY OF HIGH SCHOOL PUPILS

In the early phases of the development of our system of secondary education, American teachers and other educational leaders recognized that the high school must assume direct responsibility for supervising the study of high school pupils. The various plans of study which were devised in different schools varied somewhat in details but were similar in that they made provision for study by pupils under the supervision of teachers.

Practically all the early plans have undergone considerable modification. The basic idea underlying many of them, however, was sound. Early in their development, provisions for directed study became intimately associated with attempts to provide for individual differences among pupils. *Directed study* refers to the study activities of pupils in the classroom or laboratory under the guidance of the teacher who made the assignment.

The term *study activities* interpreted in a broad sense encompasses various types of learning. Many concepts of directed study are so limited in scope that they are incompatible with modern educational practice. To consider directed study merely as the direction of pupils in the application of the laws of learning to a given assignment is to recognize only one of its important phases. In an effort to clarify the concept, Schorling[1] has presented a list of activities to illustrate the various forms of directed study. The list is based upon observations made during a week in the classrooms of a high school of less than 400 enrollment. Among the activities observed were the following:

1. The pupils were outlining a plan for collecting data on a problem in the social studies.
2. Pupils with the teacher were working out a technique for the steps to follow in making a diagram, chart, a graph, or a map. The teacher was going from one pupil to another and offering suggestions to improve the technique employed in making the graphic representation.

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[1] Raleigh Schorling, *Student Teaching*, pp. 129-131.

3. The class was divided into groups to prepare questions on different units. The questions were later given to the rest of the class to answer in class discussion.
4. The teacher was helping the pupils in the reading period to use indexes to find the material wanted.
5. The pupils were reading subject matter and making summary statements of the unit.
6. Pupils were reading in order to answer questions that had been placed on the board.
7. Pupils weak in French were grouped together and were writing verbs, grammatical forms, etc., for drill. Strong pupils were doing extensive reading from library books, French magazines, etc.
8. Ideas gained by pupils from outside reading were summarized and outlined on the blackboard and were later copied into the notebooks.
9. Themes were being corrected in class.
10. Pupils made a sketch or cartoon illustrating a description.
11. Pupils were furnished definite goals or questions, the answers to which they were seeking. These goals were in the form of mimeographed materials.
12. Pupils were asked to read x pages and to list crucial sentences fitting into an outline on the blackboard.
13. Individuals (pupils) prepared the next day's lesson under the direct supervision, or at least the available guidance, of the teacher.

1. The Need for Directed Study in the Modern High School

The emerging concept that the methods employed by children in their study are as significant as the acquisition of knowledge has been instrumental in causing teachers to consider the conditions under which pupils study. As a director of learning, the teacher has the responsibility of providing suitable stimuli for learning. Equally important is the task of guiding learning activity toward desirable outcomes. The learning situation must be controlled to the extent that satisfactory conditions are established. Many of the factors influencing learning are inherent in the learner. Some of the determinants of learning, however, are to be found in the study environment. There are many aspects of the learner's environment, both within and outside the school, which make the control of his study environment imperative. Some of the conditions which have created a need for directed study are of comparatively recent origin. Others have existed since the first establishment of schools, but were not given recognition until recently. Several factors have contributed to the recent development of plans for directed study. These will be discussed in the following paragraphs.

New Procedures in Teaching.—When the contents of a textbook constituted the sole basis of instruction in a high school course, a pupil who took his book home with him had all the study materials necessary for what was at that time considered adequate preparation of an assignment. The introduction of the unit and project methods has altered the procedures of study. These methods require the use not only of textbooks but also of library references and other supplementary materials. Few homes are adequately supplied with these materials. The facilities of the school afford the best opportunity for extensive use of a great variety of study materials.

The new teaching procedures have injected another element into the study activities of pupils. Formerly preparation for a recitation was strictly an individual task. In the modern school much cooperative effort of pupils and teachers is considered essential to the successful operation of learning activities. This involves a group attack upon many of the problems. The solution of these group problems does not lend itself to individual study at home. Cooperative study under the direction of the teacher is essential. The necessity for self-activity in the form of independent study, however, is still present. The two types of study are complementary.

Deficiencies in Pupils' Reading.—Investigations of the reading abilities of high school pupils have revealed that many of them cannot read curricular materials at the high school level with accuracy and understanding. In a report on his study of the reading ability of school children, Gray[2] writes:

> The extent of the problem caused by deficient readers may be readily illustrated. In a study made in the Chicago suburban area involving almost six thousand ninth-grade pupils, it was found that four per cent attained scores usually made by second and third-grade pupils, five per cent by fourth-grade pupils, six per cent by fifth-grade pupils, and seven per cent by sixth-grade pupils which has been shown experimentally to be the minimum level of reading achievement at which pupils are able to read with reasonable ease and comprehension the materials usually assigned in high school. Equally large percentages of seriously retarded readers have been reported at various levels from the middle grades to the senior college. Such evidence is supported by the testimony of thousands of teachers who report a notable

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[2] W. S. Gray, "The Nature and Extent of the Reading Problems in American Education," *Educational Record,* Supplement No. 11, XIX, 90-91.

increase during recent years in the number of pupils who encounter genuine difficulties in reading.

Low general intelligence is only one of several factors responsible for reading deficiencies. Defective instruction, lack of appropriate reading materials, and failure to make adaptations to individual needs are also contributing causes. The results of an experiment[8] conducted in the Beaumont High School of St. Louis disclose that the disabilities of pupils in reading can be decreased considerably in a supervised reading-laboratory situation provided in a classroom. Sixty-nine pupils in the ninth and tenth grades who were retarded in reading were organized into two Reading-English classes. The majority of these pupils were of average intelligence or above. There was evidence that much of the retardation was rooted in poor personality adjustment. The median retardation of the two classes was 2.4 grades. The reading disabilities ranged from deficiencies in the mechanics of reading to inability to read fluently and independently. The teacher in charge recognized that the classroom should afford wide social participation, freedom from tensions, keen interests, and strong motivation.

A ninety-minute or double period each day was devoted partly to work with each class as a whole and partly to giving help to smaller groups. Directed study of material assigned in other subjects was included. Provision was made for guided free reading. Discussions of topics read were held. Source and reference materials were located and read. Dictionaries, reference books, newspapers, current magazines, and many books of suitable difficulty were placed about the room.

The progress of pupils was measured by the Iowa Silent Reading Tests, which were given at the beginning of the work in February and were repeated the following May. Sixty-seven per cent of the pupils gained one grade or more. Only nine pupils, 13 per cent, showed no outstanding improvement or a loss. The median reading score of the ninth grade class increased 2.1 grades and that of the tenth grade 1.2. Wider reading, greater enjoyment of books, and more extensive use of the school and public libraries were also evident.

A Different Type of High School Pupil.—As a result of the popularization of secondary education, the typical high school pupil of today is somewhat different from the representative pupil of the small, select group of pupils enrolled in high school a generation ago. The latter was older on the average and perhaps more capable of independent study. He usually had a definite life-career motive, leading toward some professional work. As the completion of the high school course was essential to the pupil's progress toward his vocational goal, his motivation for high school study was much stronger than is that of many pupils who are now in high school. The great majority of high school pupils formerly came from the higher economic classes. Many high school students today come from homes in which the intellectual tone and morale are low, and the conditions for study are not as favorable as those existing in the typical home of the high school student of a generation ago.

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[8] Adeline Aldrich Riefling, "Report of Two Reading-English Classes," *School Review*, I, 587-595.

Home Study Unsatisfactory.—The recognition among high school teachers that home study is usually ineffective also has served to increase interest in directed study. An investigation reported by Brewer[4] of the home-study habits of 3,000 high school pupils in Los Angeles revealed many inadequate practices. In describing their habits of study only about one fourth of the pupils mentioned any of the approved methods such as getting the main points or taking notes. Seventy-five per cent stated that when they entered high school they did not know how to study; 25 per cent said the conditions at home were not satisfactory for study; 50 per cent stated that they had no regular time for study; and approximately 75 per cent said they had no regular program for study. To these inadequacies may be added the probability that inefficient habits of study had been formed and that an attitude of dependence had been developed because too much help was given by other members of the family.

While physical conditions are not as significant as pupil purpose in effective study, distracting elements are not conducive to satisfactory pupil study. In many homes the competition provided by the radio, conversation of members of the family, "movies," and games is detrimental to the formation of proper study habits.

The assignments given by teachers have contributed to the difficulty of pupils in doing effective homework. Too frequently the assignments have been too indefinite to present a clear challenge to pupils in their study. Equally serious has been the poor judgment exercised in regard to the amount of time required of the pupil to prepare each assignment. In many instances, each teacher set up a requirement of homework as if his assignment were the only one the pupil was expected to study. When one teacher's assignment was added to those of three or four other teachers, the pupil realized that if he did all the work expected of him in a conscientious manner, he would have little or no time for recreation or sleep. Under these conditions, it is doubtful that the pupil should be condemned for taking the obvious course—that of failing to do any of the homework.

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[4] John M. Brewer, *Education as Guidance*, p. 128.

Proponents of home study have advanced several arguments in its favor. In this connection it may be useful to consider the report of the National Conference of Parents and Teachers in 1937[5] in regard to the advantages and disadvantages of home study. A summary of the report follows:

Advantages of home study: (1) Keeps the parents in touch with the school program; (2) develops a feeling of responsibility in the child; (3) provides constructive employment for time which otherwise might be idly squandered or uselessly employed; (4) makes school work a part of out-of-school situations.

Disadvantages of home study: (1) Home work is frequently distributed unevenly with three or four hours one night and almost none on others; (2) it frequently takes time from sleeping hours; (3) after a seven-hour day in school, it is too much to expect three or four hours of home study; (4) homes seldom provide suitable conditions or have adequate facilities; (5) disagreeable tasks are often assigned for home work, instead of interesting creative experiments; (6) parents are seldom trained to supervise home study; (7) little time is left for play, cultural pursuits, and contacts with other members of the family; (8) the teacher in making his assignments fails to take into consideration that his subject is only one of many requiring outside work.

Inadequacy of the Study Hall.—There are several factors inherent in the study hall situation that make it unsatisfactory for study. However versatile the teacher in charge may be in the mastery of high school subjects, he is handicapped in assisting pupils in preparing assignments made by another teacher or perhaps several other teachers. Study materials are usually not readily available. Small-group activity is not possible because of inadequate supervision and the probability of disturbing other pupils in their study. The person in charge of a large study hall usually is required to devote his efforts mainly to maintaining discipline. Only when the learning activities are properly initiated in the directed study period in the classroom can study be continued effectively in the study hall.

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[5] As described in *The Literary Digest,* February 13, 1937, pp. 31-32.

2. Overcoming Objections to Directed Study

Certain objections have been raised against directed study by persons not in sympathy with the idea. Most of the adverse criticisms have been based upon unsatisfactory procedures in the operation of the various plans of directed study. Very few are inherent weaknesses which cannot be overcome with proper modification in procedures. Some of the most common objections to directed study are indicated in the following paragraphs, together with suggestions for eliminating or minimizing undesirable results.

Directed study makes pupils too dependent upon the teacher in their study. This statement is based upon the premise that pupils acquire habits of independent study mainly by trial and error. The best assurance that pupils will acquire the ability to study independently, along with other desirable study habits, is gained by placing them under the leadership of a competent teacher who is capable of diagnosing their study difficulties and assisting them in the formation of desirable habits of study.

The time of pupils is wasted by teachers who make the directed study period one of silent reading, while the teachers attend to other matters without any attention to pupils' needs. Silent reading is one of several important forms of activity in which pupils may engage in the directed study period. In some subjects, silent reading may be the predominant type of activity. No one activity, however, should monopolize the time of the study period. Whatever the nature of the work, the teacher should give it his undivided attention. Instruction in high school would become more effective if teachers were less active in the recitation and more so in directed study.

Teachers devote too much time to slow-learning pupils and neglect the more intelligent ones. In directing study and all other teaching activities, sound judgment is required to maintain the proper balance between all the various activities. There is no reason why the judgment of teachers should not be as good in respect to pupil study as in other aspects of their work.

Some pupils have a tendency to observe the activities of other pupils and of the teacher and so fail to concentrate on their own problems. If a pupil is sufficiently interested in a piece of challenging work, the chances are slight that he will fail to give attention to it.

There is frequently too little checking of results to ascertain the effectiveness of pupil study. This is an important and difficult matter. Directed study in comparison with other types of pupil study presents the best opportunity for the teacher to learn the pupil's method of study.

Classroom teachers are not well qualified to teach pupils how to study. This criticism is based upon the assumption that, since most teachers have encountered little difficulty in their own study of the subjects they are teaching, they are unable to comprehend the study problems of pupils. The criticism is also made that few colleges for the training of teachers give much consideration to preparing teachers as directors of study. The latter argument is less potent at present than it was formerly. Teacher education institutions have recognized that directing study is one of the major responsibilities of teachers and have incorporated the topic in their methods courses and student training work. Adequate in-service programs of education for teachers may serve to supplement the work of teacher-training institutions in overcoming these deficiencies. A series of faculty meetings may well be devoted to the importance of and the procedures involved in teaching pupils how to study. Many supervisors of instruction have focused their attention on the direction of pupil study in their supervisory programs. Teachers specially trained in methods of study may provide inspiration and intelligent leadership for other teachers of a high school faculty. Teachers who know the subject matter of their fields and whose daily relationships with pupils are close and direct, should not find it difficult to acquire proficiency in directing pupil study.

Lack of adequate administrative plans for study frequently result in unsatisfactory study conditions. A common criticism is that study periods are too short for effective study. Administrative plans for study have been formulated with considerable thought in many schools. Principals and teachers who run into administrative difficulties should give consideration to the various plans in successful operation in other schools and adapt one of the plans to the needs of their own school.

3. Plans for Directed Study

Various plans designed to facilitate directed study have been devised. At the present time the divided period and the combined work-study plans are used in most high schools.

The Divided Period Plan.—Under this plan, the traditional class period of forty-five minutes is lengthened to sixty minutes. The lengthened period is divided into two parts, approximately one half being devoted to recitation and the other half to pupil study. Experience in the use of the plan has revealed that considerable flexibility in the division of time is desirable. This flexibility is both the main strength and the chief weakness of the plan. The teacher, knowing the nature of the class work and the needs of the pupils, must decide how the class period should be used; he must beware, however, of the tendency to utilize the entire class period for recitation activities, which is one of the greatest hindrances to successful operation of the plan.

The main problem in making the divided period serve the purposes of effective learning is that of devoting the entire class period to *unified learning with proper emphasis upon all its different aspects.* From the viewpoint of school administration, the divided period is apparently the most satisfactory scheme that has been devised for directed study. It is a fairly simple matter to arrange for six periods, each sixty minutes in length, in the daily schedule and set aside one half of each period for directed study. It is doubtful, however, that thirty minutes is sufficient time for study.

Combined Work-Study Period.—One of the most significant developments in instructional procedures has been the elimination of the study-recitation period in favor of a "true working period."[6] Under this plan, longer continuous periods of varied activity have replaced the shorter periods devoted to separate subjects. In the longer periods pupils engage in the study of all the subjects included in a core curriculum which varies somewhat in scope in different schools. The content from the different subjects is organized around some central theme of child interest. The length of the periods is from two hours daily in schools in which English and social studies are combined to four hours where, in addition to these subjects, art, biology, and music are incorporated in the core curriculum.

Pupil-teacher planning of topics and procedures predominates. A wide variety of source materials is utilized. Textbooks, magazines, general reference books, pamphlets, models, and films are made available. Guided trips outside the school are undertaken to obtain first-hand information concerning the topic under consideration. While the work usually centers around some general theme or topic, opportunity is provided for individual pupils to engage in different activities which contribute to the main purpose.

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[6] W. H. Burton, "A Summary and Implications of Newer Trends," *Newer Instructional Practices of Promise,* Twelfth Yearbook, Department of Supervisors and Directors of Instruction, National Education Association, p. 16.

Individual and small-group projects are carried on as well as those involving the entire class. Panel discussions, debates, forums, and reports, both oral and written, are common types of activities. Individual work is characteristic of certain phases of the work-study period. Various committees of pupils prepare material for presentation to the class. The teacher participates as guide and the responsible leader of the group. He is available at all times for pupil consultation and counsel.

The formality which characterized the older study plans and procedures are dispensed with under the work-study plan. Time schedules, processes, and standards are flexible. Under the intelligent guidance and stimulation of capable teachers, the possibility of achieving the multiple outcomes of modern education are perhaps greater in this procedure than in any of the older directed study plans.

Directing the Daily Study Period.—Regardless of how satisfactory the administrative plans for directed study may be, the success of the program depends in large measure upon the effectiveness of the study procedures in the classroom. The essentials of directing study are mutually interactive. For purposes of analysis and discussion, however, they are presented separately. They are:

1. Arrangement of a favorable environment for pupil study
2. Initiation of the study process
3. Active and effective participation by pupils in study activities
4. Direction of study activities by the teacher
5. Evaluation of the study activities by pupils and teacher

The Study Environment.—Psychologists have emphasized the importance of the "psychology of place" in connection with the establishment of desirable study habits. There has been some doubt expressed as to whether the classrooms in the typical school can be arranged in a manner suitable for pupil study. Little consideration has been given to provision for pupil study in planning school buildings. Eventually as much attention must be given to the proper study environment as is given to plans for the auditorium and the gymnasium.

Many classrooms have insufficient light. This condition may result from too small a number of windows or improper location of a sufficient number. In the case of artificial lighting, the difficulty may result from the use of light bulbs of low candle power or from placing them too far from the study desks. Too often the fact is overlooked that the intensity of the light is in inverse ratio to the distance. For example, a bulb which gives light of adequate intensity for reading at a distance of six feet from the pupil's desk is only 24 per cent adequate at a distance of twelve feet. As the distance is doubled, the strength of the light must be quadrupled to give the same illumination. Light meters should be used to measure the intensity of the light in all parts of all rooms at frequent intervals. Since dirt decreases the efficiency of incandescent lamps to a remarkable degree, bulbs and reflectors should be kept clean at all times. Cross lighting and glares also contribute to unsatisfactory conditions for pupil study.

Study desks should be sufficiently large to facilitate the use of study materials. Desks and chairs of the traditional type and arrangement are inadequate for modern recitation purposes, much less for pupil study. A satisfactory type of study desk is the study or work table.

Essential study materials such as: reading references, maps, and other forms of visual aids should be readily available. Each classroom should have its own library. Many of the books may be kept in the room permanently. These books should be supplemented with other volumes pertaining to the different units or projects which can be drawn from the central school library during the time the work on those units is in progress.

Distractions should be kept at a minimum at all times. Noise caused by pupils passing or talking in adjacent halls may be eliminated by the simple measure of keeping classroom doors closed. Within the classroom every child should be taught to respect the right of other pupils to pursue their study without interference. The teacher should be certain that his own activities in directing study do not constitute a source of disturbance.

4. Initiating the Study Process—The Assignment

Various approaches, such as pretests, overviews, and demonstrations, have been suggested for initiating units of learning. These procedures, which have their place in initiating study, are discussed in Chapter 11. They must be accompanied or closely followed by the assignment. The assignment represents one of the most important phases of teaching. It should be recognized as an aspect of teaching rather than as a preparatory step to teaching.

The assignment has been referred to as the key to the learning process, the very core of successful instruction, the heart of the problem of pupil [study] direction, the beginning point in teaching, the guide necessary to effective work in the study period, the stimulus to the learning activity, and a means of directing study. These characterizations represent attempts by various authors to emphasize the significance of the assignment in the study process. Despite this emphasis, the full potentialities of the assignment have not been realized in actual classroom practice. The most encouraging trends in assignments and assignment making are manifest in connection with the unit and project methods of teaching. Some of the most significant trends are:

1. Trend toward the cooperative development of the assignment by pupils and teacher.
2. Trend away from the oral (dictated) assignment toward the mimeographed or printed guide or work sheet.
3. Trend toward the long-term assignment.
4. Trend toward greater flexibility in terms of the varying abilities and needs of the different members of the class.

Progress has been slow in making the daily assignment an effective instrument in promoting learning. However, in many schools in which the daily recitation is still predominant the page-to-page text book assignment is being replaced by the topic and problem types.

Functions of the Assignment.—Broadly conceived, the main function of the assignment is to serve as a guide to the pupil in his study. More specifically the functions are (1) to establish a motive for engaging in study, (2) to institute worthy and significant objectives which give direction to study activities, and (3) give the pupil a clear understanding of how the study may be accomplished in an economical and effective manner.

Learning is satisfactory only when it operates toward a definite goal. A goal lends an interest motive and a direction toward which a pupil can direct learning, eliminating the non-essential and choosing and developing the essential elements. Motives which are drives to action are deep-seated in human nature. They cannot, however, be taken for granted. They may lie dormant in regard to intellectual matters unless the teacher is successful in relating school learning to the pupil's basic needs in such a manner that he is able to associate the activity with himself. While the sources of motivation may reside in the sub-intellectual life of man, the direction of his activities is dependent upon his intellectual discrimination. (Learning and motivation have been more completely discussed in Chapter 4.) In order to arouse a genuine interest in a topic, it should be related to interests previously acquired. The utilization of native impulses such as curiosity, manipulation, and rivalry is often effective.

A simple demonstration of some process or principle may be useful in arousing pupil interest. The relationships between the assigned topics and other topics of the course, or its possible future value to pupils should be disclosed. Definite and challenging learning exercises accompanied by a list of specific instructions for study are an indispensable part of the assignment. Pivotal questions serve to guide pupils in their study. Important phases of the assignment should be emphasized.

The Characteristics of a Good Assignment.—The effectiveness of the assignment in initiating the learning process is dependent upon the degree to which its functions are clearly perceived. As the assignment is a guide for the pupil it should, like all good guide posts, point unerringly straight to the goal. The teacher's directions should be understood fully by each pupil in the class. They should be sufficiently detailed and explicit to indicate to the class how to use the materials efficiently, thereby preventing pupils from wasting time in their search for materials.

The purpose of the assignment should be entirely clear to each pupil in the sense that he knows definitely what he is expected to do with it and why. The work which the pupil is expected to do should be of sufficient value to him to justify the time and effort required to do it. Emphasis upon clearness, definiteness, and specificity should not be disturbing to those teachers who believe in the freedom of the child in directing his own activities. There is no real conflict between the two concepts. Where freedom and definiteness are combined, each child has the responsibility for studying his methods of work and analyzing his progress in terms of the factors which hinder or further it. The dangers which might be perceived in a system of definite tasks and goals are offset by freedom in the choice of various subjects and activities.

Since pupils' needs, abilities, and interests vary markedly, flexibility of assignments is essential. As will be suggested in Chapter 20, the differentiated assignment represents one of the most effective means of providing for individual differences. A sufficient degree of difficulty is needed to challenge the pupil to his best efforts. The materials of the assignment and the manner in which it is made should serve to arouse a genuine interest in the following class discussion. Tasks should include real rather than "made-up" work.

Making the Assignment.—The manner in which the assignment is made is of great significance in making it an effective instrument of instruction. Assignment making represents the opportunity for the teacher to make the topics of a course real and meaningful to children.

A manifestation of genuine interest on the part of the teacher is essential to arousing pupil interest. An oral assignment made in a tone of voice which is vibrant with enthusiasm is a potent force in pupil motivation. The fact that the oral assignment is being superseded by written forms does not eliminate the necessity of oral explanation by the teacher. Usually the written directions should be supplemented by oral discussion to give an overview of the topic or to clarify parts of the assignment. Important aspects may also need to be emphasized. While the organization of the materials in the written assignment may be designed to serve this purpose, detailed oral instructions contribute to the pupil's understanding of what points are to be emphasized.

The utilization of written assignments does not eliminate the need for setting aside a considerable portion of the class period for making the assignment. Nothing is more deadly to pupil interest than the distribution of assignment sheets in an impersonal routine manner. The amount of time needed for assignment making depends upon its nature, scope, and form. Some students of classroom methods have suggested that a minimum of from one fourth to two fifths of each class period be devoted to making the assignment. In general, this does not represent too much time. The amount of time varies somewhat from one recitation to another. An entire class period occasionally can well be devoted to assignment making, while in other periods little or no time may be necessary for this purpose. The teacher can easily become so engrossed in other phases of teaching that he reserves an insufficient amount of time for initiating the study process in the most effective manner.

Closely allied to the question of the optimum amount of time to be devoted to making the assignment is the question of the most appropriate time for making it. The sequence and particular nature of the other class period activities dictate the answer to a large extent. In the divided period, the assignment should be made immediately before the pupils begin their study. Making the assignment for the next day at the beginning of a class period to be devoted entirely to recitation insures adequate time for it. However, an assignment made at that time assumes that the work planned for that particular recitation will be completed.

Regardless of how carefully the lesson is planned, a teacher cannot always estimate the amount of time needed to complete every task. If all the work anticipated is not completed, the assignment previously made may be modified or supplemented at the close of the class period. Since an assignment should grow out of the preceding work, the end of the recitation period has the distinct advantage of being the time when the teacher knows definitely the extent of the work completed. The main disadvantage of postponing the assignment until the end of the recitation period is that too frequently other activities are allowed to monopolize the entire period. The ideal time presents itself when there is clear indication as the class work proceeds that a particular phase of the work leads directly into that which is to follow.

The use of the written assignment simplifies the task of assignment making to a considerable degree. For reasons of clarity and economy of time, the written form is superior to that dictated to pupils by the teacher. Its use eliminates the possibility of error which is present when the pupils write their own versions of oral assignments. The written form also is available for reference by pupils in the course of their study.

Facilities for duplicating typewritten material are available in most schools. However, many teachers have failed to utilize them for assignment purposes. The junior author of this book recently observed the work of a social studies class in charge of a teacher who uses the outline type of assignment. The outline had been written on blackboards, extending around the four walls of the classroom. The pupils spent the entire class period in copying the outline in their notebooks. A mimeographed copy of the assignment distributed to each pupil, with a brief oral explanation of it, could have saved the major portion of the class period for more interesting and educative work than that offered by the exercise in handwriting. If mimeographing equipment is not available, writing the assignment on the blackboard is preferable to giving it orally.

Evaluating the Effectiveness of the Assignment.—The effectiveness of the assignment should be measured in terms of the outcomes of the study engendered by it. The new concept of learning considers the individual as an organism in interaction with his environment. Since these reactions are numerous, the outcomes are multiple. Evaluation of these outcomes is more adequate when observational techniques for recording behavior, in addition to the more traditional instruments of measurement, are employed. The instruments and techniques for measuring the outcomes of learning will be discussed in Chapter 21.

The most common and least satisfactory of all the methods of appraising the assignment is that of devoting the entire recitation to oral testing of the pupils' preparation. The written test is a more economical and reliable means of measuring pupil achievement. Utilizing the recitation for testing represents a diversion of the recitation from its more important purposes—supplementation, elaboration, and application of knowledge. Another significant function of the recitation is the development of desirable social attitudes and ideals. A demonstration in panel and socialized recitation discussions of the pupils' ability to use knowledge acquired in their study is a more accurate index of the quality of their preparation than are individual responses to a series of isolated questions posed by the teacher.

Data obtained from the measurement of the pupils' mastery of factual material should be supplemented by information gained from a consideration of the following questions:

1. Did the activities invoked by the assignment contribute to the social maturity of pupils?
2. Did the pupils' study have educative value?
3. Did the assignment lead to activities which contributed to growth in total pupil personality?
4. Did the work result in new and improved aspects of behavior, such as desirable understandings, attitudes, and appreciations?
5. Did learning activities originate in the purposes of the pupils?
6. Were the learning materials interesting and challenging to pupils?
7. Was provision made for wise use of source materials, choice of values, and solving problems?
8. Were vocabulary and other difficulties anticipated?
9. Did the assignment give proper consideration to different abilities and past experiences of the pupils in the class?
10. Were initiative, originality, and creative activity on the part of pupils permitted to emerge?
11. Were the pupils free from unnecessary tension?
12. Were the pupils able to discover the relationships between the assignment and other assignments?
13. Did the assignment guide the study activities in an economical and effective manner?
14. Was there pupil participation in assignment making?
15. Did the assignment induce critical thinking on the part of the pupils?

16. Were the goals which were established attained by the pupils?
17. Did the pupils experience the joy of success?

5. THE TEACHER AS DIRECTOR OF STUDY

In the modern school the teacher is considered as a director of learning of a variety of types having as objectives a variety of types of behavior outcomes—information, habits, skills, interests, attitudes, and ideals. The teacher is responsible for arranging situations which provide suitable stimuli for learning. The skillful teacher performs this role without resorting to the artificial stimulation of warnings of pupil failure, low marks, and coming examinations. Some psychologists suggest the need of *disturbing the mental equilibrium of the child*. The only defensible method of creating this condition in the mind of the child is by assisting him in gaining a clear recognition of the need of acquiring desirable behavior patterns which he does not possess. The child's understanding of the value of learning, together with participation in learning activities which are for the most part satisfactory to the learner, is sufficient incentive. The good teacher does not often find it necessary to disturb the mental equilibrium of the child by instilling fears of school and vocational failure.

The teacher has the responsibility not only of providing stimuli which compel to action but also of *directing* the learning activity into channels which result in improved habits of action. Adolescents are sensitive to stimuli which may lead to behavior of many diverse kinds. The teacher should perform the task of directing the abundant energies of these adolescents into approved ways of human endeavor.

The teacher's role in directing study activities is that of guidance, stimulation, encouragement, and evaluation. The specific duties vary with the nature of the subject and the maturity of the pupils. While each directed study situation calls for a great range of teacher activities, self-direction should rest as largely as possible with pupils at all times. A positive program of teacher guidance in pupil self-direction is indispensable. No policy of negative inaction will suffice.

A requisite for effective teacher leadership in directing study is a thorough knowledge of the practical operation of the laws of learning. Information in regard to the nature of learning is contained in the synthesis of the various psychologies of learning in Chapter 4.

A knowledge of the general characteristics of adolescents and an understanding of the specific abilities and needs of pupils under his supervision are essential to the teacher in directing study. Information obtained by careful diagnosis of the difficulties encountered by individual pupils should be utilized in planning study procedures. Obviously, it is impossible to remove the obstacles without a clear understanding of the causes of their existence. Teachers who have never experienced serious frustration in their own learning frequently are unable to realize that their pupils have problems in this respect. The gap caused by the different viewpoints and degrees of maturity of adolescents and adults also is not easy to bridge.

The directed study situation presents many opportunities for the observation and analysis of study techniques. However, the observations may be superficial and meaningless unless the teacher uses the insights thus gained as leads in assisting pupils in the formation of effective study habits.

The teacher who directs study on a part-time basis rarely if ever acquires proficiency in directing study. The study period is not the proper time for the teacher to score examination papers or bring his correspondence up to date. He should devote the entire period to helping, guiding, and encouraging pupils in their study. It will not suffice to give pupils the opportunity to come to the teacher's desk for assistance. Those who need help the most may not avail themselves of this privilege. The teacher should move quietly about the room, observing and conferring in a subdued tone of voice with individuals or groups of pupils who need assistance. Whenever the same difficulty is encountered by several pupils, the teacher may conduct a group discussion for the purpose of removing the source of the trouble. While individual pupil effort is a distinguishing feature of directed study, committees and other forms of cooperative endeavor comprise a highly desirable form of directed study activity. Early in the school term some time should be given to general discussions and demonstrations of effective methods of studying the subject. Chapter 9 contains suggestions on methods of teaching pupils how to study.

QUESTIONS, EXERCISES AND PROBLEMS

1. What conditions in the school and home have created a need for directed study?
2. What is the modern conception of the teacher's responsibility in directing learning activity?

3. List the essential activities involved in directed study.
4. In what respects do the more recent plans for directed study differ from the older plans?
5. Indicate the activities of the teacher in directing the study of pupils.
6. What place has the assignment in directed study?
7. Prepare a differentiated daily assignment in the subject you are interested in teaching.
8. Evaluate the criteria for evaluating a daily assignment suggested in this chapter. Suggest other criteria.
9. What are the chief factors in learning? How may they be utilized in directing study?
10. How much and what type of home work should be required of junior high school pupils? Of senior high school pupils?

Chapter 9

TEACHING PUPILS HOW TO STUDY

The immediate objective of the directed study period is the preparation of the assignment. The ultimate objective is the establishment of effective, independent habits of study. The failure of the pupil to achieve the first objective is disconcerting to the teacher. Unless the second objective is attained, the pupil is seriously handicapped in his learning activities both in and outside of school.

There is considerable evidence of an increasing awareness on the part of teachers that their most important single responsibility is to facilitate learning. An essential aspect of the teacher's work in this regard is that of assisting pupils in acquiring proper study techniques.

Results of numerous investigations and observations reveal the inadequacy of the methods used by high school students in their study. Many of the causes of pupil failure and maladjustment in school can be attributed to poor study habits.

High school teachers formerly placed the blame upon the elementary school for the child's deficiencies in learning, especially his inability to read and spell. The reply of the elementary school teacher is: "We teach children to read the materials and spell the words which are suitable for the elementary school child. It is the responsibility of high school teachers to teach the vocabulary and reading skills required for high school courses." The validity of this point of view is now granted by high school teachers, as is revealed by the introduction of remedial reading classes in high school. More conclusive evidence, however, that high school teachers generally recognize their responsibility for teaching pupils how to study is to be found in the evaluations of their efforts to discharge this duty. It is doubtful that anyone is better qualified to teach pupils to study mathematics than the mathematics teacher. The science teacher likewise should be in the best position to assist pupils to study effectively the instructional materials in his field. Moreover, the development of efficient study skills cannot take place in any one class or in any one grade alone; it must be a continuous process at every level of school experience.

Inability to read is no doubt one of the major difficulties encountered by students in their study. It does not, however, constitute the sole problem. In fact the causes of poor study habits among pupils are numerous and complex. The first phase of a program for the improvement of study habits should be a careful diagnosis of each pupil's difficulties. The diagnosis must be on an individual basis, for pupils differ as much in regard to study habits as they do in other respects. Many of the causes of ineffective study among pupils, nevertheless, can be traced to the same source.

1. DIAGNOSING PUPILS' STUDY HABITS

Factors Which Influence Study.—In diagnosing the study habits of pupils, the teacher should understand the factors which condition learning. The evidence from scientific investigations and observation indicates that some of the most important factors can be identified and isolated for analysis. It should be observed that these factors seldom operate singly but usually in combination. The effects of some of the condition factors are cumulative in that a series of minor specific difficulties, for instance in mathematics, may result in a serious total disability in the subject. Some of the factors are not obvious; for example, a pupil's distaste for a subject may have had its origin in his dislike for his teacher of that subject in his early school days.

A brief reference to a few of the most significant factors which influence study may be helpful in the diagnosis of the difficulties high school pupils encounter in their study.

Health.—Physical fitness is essential to the establishment and maintenance of proper study habits. Undernourishment, poor vision, and defective hearing are some of the physical conditions which may seriously handicap a child in his study. Closely associated with physical health is mental health, and the two are mutually interactive. Emotional factors such as undue anxiety, fear, or worry block the normal intellectual processes. Investigations have shown clearly that, in a small percentage of pupils, greatly increased learning efficiency has resulted from correcting a physical defect or an emotional block.

General Intellectual Ability.—The results of tests of mental ability administered in secondary schools reveal that many pupils do not possess the ability to perform many of the abstract intellectual tasks required by the present-day curriculum. The wide variations in the mental abilities of pupils enrolled in high schools are discussed in Chapter 19.

Environment for Study.—Many features of the physical environment, such as proper lighting, ventilation, and quiet, are important determiners of the effectiveness of study. Since many homes do not meet the minimum standards in this respect, the school has assumed responsibility for providing directed study under more favorable conditions. However, in many schools optimum conditions for effective study are not provided. Careful consideration should be given not only to proper heating and lighting but also to the appearance of the room and the arrangement of blackboards, bulletin boards, etc.

Study Skills.—The complexity of learning was not fully recognized by teachers until comparatively recent times. In order for a pupil to study in the most effective manner, he must possess numerous study skills. The ability to comprehend what is read and to outline, summarize, and review properly are, to mention only a few, prerequisites to efficient study. Adequate reading ability is of sufficient importance in this respect to deserve special consideration later in this chapter.

Methods of Study.—High school pupils differ greatly in respect to their skill in employing efficient study procedures. A superficial observation of the study activities of a group of high school pupils may lead to the conclusion that all of them are using the same techniques of study, whereas in reality there are striking differences in degree of concentration, planning, attentiveness to important matters, and methods of memorizing.

Interest in Study.—A genuine interest in a task is essential to its performance. The failure of pupils to recognize the significance of the work required of them in school results in lack of attention and interest. A pupil's interest in study is also greatly influenced by the teacher, by the nature of the subject, and by his classmates and associates.

Emotional Factors.—Disabilities in study are frequently accompanied by unfavorable emotional reactions. The most common of these reactions are dislike for study, undue discouragement, indifference, or some type of compensating activity. These outcomes are to be expected when negative methods of directing study activities are used. Condemnation and ridicule are dangerous substitutes for a positive program in which pupils are given intelligent guidance in eliminating their errors in study. In the early phases of a constructive program designed to improve study procedures pupils are given opportunities to study materials related to their experiences, thus enabling them to feel successful in their endeavors.

Incentives and motives are powerful factors in the process of learning. The former can be described as the external factors which arouse motives or desires to work. These two conditions will be mentioned only briefly, since their place in the learning process has been discussed quite fully in Chapter 4. Teachers need to recognize the part which these various factors play and utilize them constantly.

Understanding of the Task.—The pupil should understand clearly *what, why,* and *how* the task is to be done. The assignment should be designed to serve these purposes. If the pupil is not definitely informed in regard to the requirements of the task, he often assumes an attitude of indifference to school work.

Previous Achievement.—A pupil's enthusiasm for a subject may be conditioned by his previous record of achievement. The trite statements, "Nothing succeeds like success" and "Failure begets failure" are realities in a child's school experiences.

Conflicting Activities.—The achievement of a pupil in a given course may be affected adversely by his participation in other school or outside activities. In the diagnosis of pupil's study difficulties it is necessary to consider not only the number of conflicting activities but also their type or character.

Unfavorable School Situation.—Widespread indifference to study on the part of pupils may also be traced to curricular materials which are too compact, formidable, and difficult. Likewise unfavorable for the development of good study habits are teaching methods which fail to generate genuine interest in learning. Lack of challenging definite assignments is also detrimental to the formation of proper attitudes and habits of study.

Teachers who are the most successful in facilitating study and learning give much consideration to (1) the establishment of cooperative pupil relationships, (2) democratic pupil-teacher relationships, (3) affording opportunity for group recognition of achievement, and (4) respect for the learner as an individual.

Methods of Diagnosing Study Difficulties of Pupils.—An accurate appraisal of the difficulties encountered by pupils in their study is basic to any program designed to improve study habits. Various means are at the disposal of the teacher who wishes to make an inventory for the purpose of eliminating some of the defective study techniques. A few of the most widely used means and methods are as follows:

1. Tests in silent reading
2. Achievement tests
3. Analysis of errors in oral and written work
4. Tests of mental ability
5. Informal tests in skills in use of the textbook, the dictionary, and other reference materials
6. Profile chart of each pupil's sustained attention and application
7. Observation of the pupil's study procedures in directed study periods
8. Results of pupil's self-inventory of his own study habits
9. Health data on each pupil
10. Evaluation of home conditions
11. Study of type and number of pupil's school and outside activities
12. Information in regard to pupil's associates
13. Inventory of pupil's interest usually by means of questionnaire
14. Items in pupil's cumulative record in regard to his reading interests and books he has read
15. Data obtained from pupil's responses on self-rating sheets and in personal conferences
16. Evaluation of adequacy of school's provision for pupil study
17. Critical evaluation of teaching assignments as instruments for initiating the study process
18. Pupil's report of his study procedures in conference with teacher or by means of questionnaire
19. Case study of the socially maladjusted pupil
20. Individual diagnosis and treatment of the pupil with serious deficiencies in study and achievement

Desirable Study Habits.—The degree of learning which occurs as a result of the use of a particular study procedure is the best criterion of its effectiveness. In order to assist pupils in the establishment of effective study habits, it is necessary for the teacher to be able to identify study procedures which are conducive to satisfactory learning. Various scientific investigations of study which promotes satisfactory learning have been conducted. Judging from these investigations the following abilities and habits of study appear to be essential to optimum learning:

Desirable Abilities in Study:

1. Power to concentrate
2. Independence in study

3. Accuracy and speed in locating study materials
4. Competency in evaluating the relative value of materials
5. Ability to organize materials
6. Skill in outlining and summarizing study materials
7. Ability to read with comprehension and speed
8. Efficiency in use of library materials and audio-visual aids to learning
9. Facility in taking notes on reading and lectures
10. Ability to relate new learnings to previous knowledge
11. Capacity for analysis of one's own study difficulties

Desirable Study Habits:

1. Studying at definite time and place
2. Arranging physical environment favorable for study
3. Keeping study materials in order
4. Habit of keeping a study plan
5. Keeping complete notes on readings, discussions, and lectures
6. Studying assignment soon after it is made
7. Looking up unfamiliar words
8. Reflecting upon reading
9. Memorizing significant concepts, facts, and generalizations
10. Reviewing main points of previous lesson
11. Reviewing lesson before class
12. Supplementing information from one text by use of library reading materials and audio-visual aids
13. Underscoring key words and making marginal notations in textbook
14. Staying at learning tasks until they are completed

2. ASSISTING PUPILS IN ESTABLISHING EFFECTIVE HABITS OF STUDY

"How to Study" Courses.—Various methods of helping pupils in acquiring effective habits of study have been employed in secondary schools. In some instances, lists of general directions for effective study have been formulated and distributed or presented to students in classroom or home room discussions. In other schools, a unit on "How to Study" has been included in a general orientation course for junior high school pupils. Numerous manuals containing suggestions in regard to proper methods of study have been published. These publications have been utilized extensively by teachers in an effort to improve pupils' study habits.

There is some evidence that students of superior ability are able to apply general rules in their own study. There is little conclusive evidence, however, that the study procedures of the great majority of pupils are improved as a result of "how to study" courses.

More recently an endeavor has been made to relate the rules for study more closely to actual learning materials. By the presentation, if suggestions for study are presented as the need for them arises, the pupil can more readily perceive their value as well as their possible applications.

Improving General Study Habits.—The outcomes of instruction in the rules of study appear to indicate that the main limitation on their effectiveness has been the manner of presentation rather than any unsoundness of the rules themselves. Many of the suggestions for study about which there is fairly general agreement are in keeping with accepted principles of psychology. The following general suggestions for establishing effective study habits are included in many lists:

1. Keep physically fit by forming proper habits of sleep, eating, and exercise.
2. Choose your elective subjects, with the assistance of your counselor, in terms of your abilities.
3. Plan and adhere to a time schedule for study. Budget your time.
4. Arrange a definite place for study, e.g., a certain desk at home or in the school library.
5. Be certain that conditions of lighting, heating, and humidity are conducive to effective study.
6. Provide yourself with a desk to be used exclusively for study.
7. Select a type of chair for use in studying that does not encourage lounging or "draping your body" over it.
8. Arrange study aids, e.g., books, pencils, scratch paper, etc., so they can be located quickly when you need to use them.
9. Have dictionary and needed reference materials at hand.
10. When the time comes for study, seat yourself at your study table and arrange the materials for study. This is important in breaking down the initial resistance to study. Reclining on a comfortable couch may encourage one to procrastinate in beginning study promptly.
11. Study intensely. Do not permit other subjects or activities to prevent you from concentrating on the matter at hand. A short period of active concentrated study may be more productive of results than a much longer period of divided attention.
12. In home study, if radio music prevents you from developing feelings of isolation, let the radio play, provided of course it does not disturb other persons. A strong interest in a subject tends to minimize the effects of otherwise distracting factors. If your

interest in a subject is not great in the beginning, remember interests are acquired quite often after a certain degree of skill or ability is attained. You may not like to practice on the piano, but when you learn to play fairly well, you are likely to enjoy practicing much more.

13. If you have assignments to prepare in four academic subjects, devote a total of two hours to home study in addition to the study time in school.
14. Do not postpone the study of an assignment from one day to the next. Regular daily study is more effective than "cramming periods" just before an examination.
15. Acquire the habit of doing a considerable amount of your studying alone. Reliance upon the stimulus which comes from the presence of other persons prevents you from developing the ability to "go on your own."
16. Study your assignments as soon as possible after they are given.
17. Underline important words or phrases in your textbook.
18. Spend part of the study time reciting the main ideas in your reading to yourself.
19. Make application of the new material to what you already know.
20. Relate dates and characters you wish to remember to some already known event or person.
21. Make brief notes in outline form of the main ideas you wish to recall, and review the notes at intervals.
22. Intersperse long study periods with brief intervals of relaxation.

3. Teaching How to Use Reading Materials

Reading materials constitute one of the most important sources of school learning. In the modern high school, extensive use is made of many types of books, including textbooks, reference books, periodicals, and pamphlets. Since these materials contribute to various aspects of the total learning situation, somewhat different skills are required in their use. The one requirement in common is the ability to read effectively.

Using Textbooks.—The purpose of textbook reading is to acquire understanding of the author's ideas and point of view on a particular subject. The intelligent use of a textbook requires careful, critical reading. The reader should evaluate, challenge, supplement, and make application of the statements of the author. If the preparation of an assignment requires the mastery of the material in a chapter of the textbook, the pupil should find the following procedure helpful:

1. Make a brief, rapid survey of the chapter to ascertain its general theme and obtain an over-all view of the material and its plan of organization. In the survey, particular attention should be given to the main divisions, which are usually indicated by capital letters; the next most important items by heavy type and those of lesser importance by italics. In the survey, illustrations, graphs, and tables should be observed for the purpose of ascertaining their general content and the reasons for their inclusion in the chapter.
2. The general survey should be followed by a careful reading of the chapter in which close attention should be given to the exact meanings of words, sentences, illustrations, graphs, and tables. Each sentence as well as each paragraph should be analyzed for its central thought and related to the main theme of the chapter. These analyses should be characterized by a critical attitude in which the author's point of view is accepted or rejected in the light of the reader's experience or collateral reading. These reactions of the reader are an essential part of the learning process.
3. Review and reread the main ideas expressed in the chapter. There is little advantage to be gained by reading a chapter over and over without an attempt to concentrate on the main points which are not clear. Try to recall the main points and review those which you have not mastered. This process should be repeated until the required degree of proficiency has been achieved.

The skillful use of a textbook involves also the ability of the reader to understand and utilize the various parts of the book. The preface may reveal valuable insights into the author's purposes in writing the book as well as information in regard to the general organization of materials. The intelligent use of the table of contents and index prevents unnecessary loss of time and mental confusion. The differences in manner of organization and function of the index and the table of contents should be revealed by a brief explanation and drill in their use. In a similar manner, the values of the bibliography, glossary, and appendix can be disclosed.

Rate in Reading.—Since the main purpose in reading some books is merely to gain a general impression of their content, a rapid reading is all that is required. However, in reading in which the development of understanding is the chief objective, rapid reading also is often desirable. While there is a positive correlation between comprehension and speed in reading, it may be advisable in teaching to emphasize one or the other of these abilities separately as the need of the class or individual may seem to indicate at the time. Timed exercises and tests have been used to advantage in assisting pupils to acquire greater speed in their reading. Short practice periods in which pupils are encouraged to find the meanings of sentences or paragraphs as quickly as possible have been utilized for the purpose of increasing the rate of reading.

Comprehension in Reading.—Reading comprehension involves more than an understanding of individual words, for their associative meanings are essential to comprehension. Vocabulary mastery nevertheless facilitates comprehension. Procedures employed in increasing the vocabularies of high school pupils include guided reading experiences of considerable scope and variety; the direct method, which involves the study and discussion of significant words and terms; enrichment of first-hand experiences by school excursions, interviews, and the like; use of audio-visual aids; and the use of word lists, which is the most artificial and unsatisfactory of all the methods.

The pupil's comprehension may be enhanced by his reading a brief selection and summarizing the main ideas in the form of a written statement. The pupil may be asked to analyze the selection in regard to the adequacy and relevancy, in relation to his own experience, of the ideas presented. The selection may also be examined for the purpose of ascertaining whether the different statements are expressions of opinion or of fact. Pupils may also be requested to ascertain the author's intent or purpose.

Developing and Guiding Reading Interest.—The ability to read does not automatically insure an enduring interest in reading worthwhile materials. The guidance of pupils in the reading of authoritative sources of information and good literature is as important as development of the ability to read.

The first phase of a reading program, designed to assist in the formation of satisfactory reading habits, should be devoted to an inventory of the pupil's present reading interests.

This analysis should be accompanied by a study of the sources of different interests. The significance of individual tastes and temperaments should be recognized and to a degree respected. It is important to recognize the difference between a reading program devoted exclusively to comics, mystery stories, and thrillers and one which includes these materials among other types of reading.

The reading of books of inferior quality and limited scope cannot be eliminated by preachments or prohibitions. A positive program of inculcating strong interests in more worthy reading materials is essential. Surrounding the pupil with good books he can enjoy is one of the best methods of leading him to read them. The school librarian can be of great assistance to the classroom teacher in directing the attention of pupils to certain books. Some of the devices which have been of value in motivating pupils to read good books in the library are as follows:

1. Display colorful book jackets and advertisements.
2. Display a book open at an interesting picture or passage.
3. Arrange exhibits of books related to some special interest.
4. Announce the acquisition of new books.
5. Utilize special events or holidays to feature a certain book, e.g., a biography of Lincoln.
6. Use a simple system of classification of books and supplementary reading materials in order that they may be readily available to pupils.
7. Give pupils information in regard to procedures of locating, checking out, and returning books to the library.
8. Manifest a genuine enthusiasm for books and interest in pupil's reading.

Teaching How to Read in Different Subjects.—Ideally, training in good study and reading habits will be given in each course, with each teacher sharing in the responsibility of teaching pupils how to read. It is more practical for instructors to teach pupils these techniques in their own subjects than to hope for transfer from a "how to study" or general reading course. Then, too, each subject studied is somewhat different from the others and requires its own special methods of study.

The following suggestions for teaching pupils how to read materials on the social studies and science are adapted from a recent report[1] of the subcommittee on reading of the North Central Association of Secondary Schools and Colleges:

Suggestions for Reading in the Social Studies

1. Accumulate and analyze all information available about students.
2. Recognize strong and weak points in reading habits by giving students frequent short tests over selected passages read in class.

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[1] Clarence E. Blume, Chairman, *Attacking Reading Problems in Secondary Schools*, pp. 33-43.

3. Allow pupils to help in formulating objectives for each study unit in order to provide motivation in reading.
4. Assign references which will provide general orientation and a background of experience.
5. Help pupils to adjust method of reading to the purpose, e.g., skimming, slow reading, etc.
6. Assist pupils in reading to get the main idea or ideas by having them write down the main thought of a passage read, using complete sentences. This practice can also be adapted to the reading of graphs, charts, and diagrams.
7. Encourage students to build a vocabulary by:
    (a) Having them submit new terms to develop a master test.
    (b) Encouraging them to use new terms frequently, insisting that they be able to explain them if necessary.
    (c) Discussing at the beginning of class unfamiliar terms which students want clarified.
8. Help pupils in the location of information.
9. Teach pupils how to discriminate between relevant and irrelevant information, between reliable and unreliable information:
    (a) Discuss standards of accuracy of published materials.
    (b) Examine several issues of a periodical to discover whether it seems to follow a consistent policy.
    (c) Urge students to look for the purpose behind the writing of material.
10. Assist students in relating new information to previously acquired information:
    (a) Before undertaking a new assignment, ask the pupil to recall what he already knows about the subject.
    (b) In note-taking, advise the pupil to make notes only when he encounters a significant new idea or new information which may either support or contradict his previous understandings.
11. Encourage pupils to broaden the scope of voluntary reading:
    (a) Read orally excerpts from books or articles likely to interest the students.
    (b) Provide time in class for pupils to do free reading.
    (c) Call attention to new materials by bulletin board displays.

Suggestions for Reading in Science

1. Help the pupil to understand a new unit or assignment by effective orientation:
    (a) Examine content of new unit in text or texts to be used.
    (b) Read paragraph headings of each smaller assignment in one text and emphasize points of special importance and difficulty.

2. Assist the pupils in developing a scientific vocabulary:
    (a) Write each new word on the blackboard at the time it is first encountered, divide it into syllables, pronounce it several times, and then call upon several of the pupils to pronounce it in turn.
    (b) Introduce each new term into class activities and encourage the pupils to do the same.
3. Train the pupils to comprehend and follow directions:
    (a) Insist upon careful reading of instructions; then ask pupils to state orally and explain the procedures.
    (b) Point out possible difficulties and possible sources of error or danger.
4. Teach the pupils how to interpret diagrams and graphs.
5. Help the pupils to comprehend problems by having them read problems aloud and then restate them in their own words to insure correct understanding.
6. Facilitate understanding of formulas and equations by stimulating pupils to form the habit of "translating" formulas into words.
7. Make sure that pupils can use indexes, glossaries, and reference materials.
8. Help pupils to establish the habit of concentration.

4. The Use of the Library and Reference Materials

One of the most important study skills is the technique of obtaining information upon a given subject. Since the library is one of the principal sources of information in all fields of human knowledge, it is essential that high school students acquire the ability to use library materials effectively. This involves the ability to locate books, pamphlets, and periodicals with efficiency, speed, and a minimum of effort. The predicament of many pupils who search for information in a library is well stated in the following lines:[2]

> Oh Freshman, Oh Freshman, where have you been?
> I've been to the library to find dates of a queen,
> Oh Freshman, Oh Freshman, what did you do there?
> Found so many books I could do nothing but stare.

Equally important in the effective use of the library is an understanding of the guides to the content of a book—the table of contents and index—and the appendix. The acquisition of skills in library usage is of little consequence, however, unless the *habit* of utilizing library materials is firmly established. The habit of using the library is of great importance to a person while he is in school and also in adult life.

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[2] Margaret Barkley, "Arrows for Freshmen," *Library Journal.* CXIV, 402.

A large share of the responsibility of guiding pupils in the habitual use of the library rests with the classroom teacher. Regardless of the efforts of the school librarian, unless the teachers make library assignments and encourage their students to use the library, it will remain only a place of cold storage for books. It is inconceivable that the teacher of any subject in the modern high school should not require students to make extensive use of the school library.

In the past, one of the main reasons for the lack of interest on the part of students has been because of the poor selection of materials available in many high school libraries. With the advent of the professionally trained school librarian, most high schools have added library materials more adapted to the abilities and interests of adolescents. In this respect the teacher, as a member of the school library committee and also in his role as classroom teacher, can render valuable assistance in developing a school library that will make a strong appeal to adolescents. Likewise essential to a good high school library is a proper balance of materials in terms of the different subjects and also in regard to the different types of literature. There is a place for both fiction and non-fiction books in a high school library. Likewise there should be a proper balance between reading material pertaining to past and to contemporary events.

The acquisition of the fundamental library skills, such as abilities to locate materials and to use them expeditiously, is likewise dependent upon the cooperation of the classroom teacher and the librarian. This cooperation is achieved by various methods in the present-day high school. In some instances, a unit course in library instruction has been taught by the high school librarian. The chief advantage of this type of instruction is that all the main topics are adequately treated by a person trained in library science. In an increasingly large number of schools, instruction in the use of the library is integrated with the various high school courses. The lessons on a particular library skill are taught when a teacher's assignments call for the use of that skill. This plan has the advantage of enabling students to see the need and application of the library skill.

In other schools, library skills have been incorporated in a general orientation course for all freshmen. In still other schools, informal instruction is given the pupil by the librarian when he comes into the library and requests assistance. Perhaps a combination of two or more of these methods would tend to insure optimum use of the library by students.

Regardless of where or by whom the instruction is given, the pupils in a high school should be given instruction in certain basic library skills. The relative emphasis which should be placed upon the different skills should be ascertained upon the basis of information about the needs of a particular group of students. A diagnostic test of library skills should be administered preliminary to instruction. Several diagnostic tests are available to teachers. Some of the best known were devised by Douglas,[3] Morse and McCune,[4] and Reed.[5] The results of these tests have revealed that high school pupils have deficiencies in many of the fundamental library skills, such as alphabetizing, the use of common abbreviations, and an understanding of the Dewey Decimal System of classification.

The results of a test on library skills, when supplemented by observations of the study techniques of a particular group of pupils, serve to reveal the relative emphasis which should be placed upon various topics in a unit on the use of the library. In high schools in which instruction in library skills is given, some attention is usually given to the topics discussed in the following paragraphs.

Location of Library Materials.—In the event that the Dewey Decimal System of classification is used, an understanding of the ten main classes of books is necessary. These divisions are as follows:

000-099—General reference
100-199—Philosophy, psychology, conduct of life
200-299—Religion, mythology
300-399—Social science (sociology, political science, government, etc.)
400-499—Language (dictionaries, grammars)
500-599—Natural science (mathematics, general science, biology, chemistry)
600-699—Practical arts (agriculture, aviation, health, home economics, inventions, manual training)

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[3] Mary Peacock Douglas, *Teacher-Librarian's Handbook,* American Library Association.

[4] Horace T. Morse and George H. McCune, *Selected Items for the Testing of Study Skills,* Washington: National Council for the Social Studies.

[5] Lulu Ruth Reed, *Test on the Use of the Library for High Schools,* Forms A and B, Chicago Planograph Corporation.

700-799—Fine arts (music, painting, drawing)
800-899—Literature (poetry, drama, essays)
900-999—History (geography, travel, biography, history of different countries)

These main classes of books should be learned in the general orientation unit on the use of the library.

The Card Catalog.—High school pupils should be given instruction in regard to the following features of the card catalog, which is the index to the content of the library:

1. Kinds of call cards: author card, title card, subject card, cross-reference card
2. Information on call card: call number of book, author, title, subject, name and address of publisher, date of publication, number of volumes and pages, inclusion of illustration, and number of copies owned by the library

Skill in the use of the indexes in the library such as the *Reader's Guide to Periodical Literature* will save both students and teacher much time and effort. The effective utilization of these sources of information enables the student to become an independent worker. Guided trips through the library, in which the students can inspect these aids in creating materials while explanations of their use are given by the librarian or teacher tend to insure greater understanding. These trips should be followed by practice exercises in which pupils compile lists of books by a certain author or on a particular topic.

The Use of the Dictionary.—In a program designed to develop effective habits of study, instruction should be given in the use of the dictionary. The high school student needs to know what items of information can be found in the dictionary and how to locate them. The habit of using the dictionary in study contributes to clearer understanding and facility of expression. Since the information contained in an abridged dictionary is necessarily limited, high school students should be encouraged to make extensive use of unabridged editions.

Pupils should be made to realize the advantages of the use of the unabridged dictionary. The teacher should emphasize the fact that in an unabridged edition, a rich variety of information can be found concerning practically every word, as follows:

1. Spelling
2. Pronunciation

3. Syllabication
4. Capitalization
5. Part of speech
6. Inflectional forms: of a noun, the plural; of a verb, the principal parts; of an adjective, the comparative and superlative forms
7. Derivation
8. Exact meaning
9. Different meanings of the word
10. Status of the word: obsolete or current usage; standard, colloquial, dialectal, or slang usage level
11. Meanings in combination with other words
12. Synonyms

In addition to the foregoing information in regard to words, unabridged dictionaries contain foreign words and phrases, illustrations, abbreviations, and proper names. Teachers of all subjects should provide training for skills in and habits of using the dictionary. A list of topics may be given pupils with the request that they indicate whether the dictionary or the encyclopedia should be used in obtaining information in regard to each topic. Topics similar to the following may be used:

1. The location of the Parthenon
2. The meaning of *navigation*
3. The population of Buenos Aires
4. Synonyms for *serene*
5. How rayon is made
6. Biography of Thomas A. Edison

Students should be instructed also in the use of guide words at the top of each page, cross references, and related topics.

Other Reference Books.—Many high school libraries contain other reference books which are valuable sources of information for pupils who are engaged in project work or who wish to supplement textbook material. Some of the most widely used special reference books are:

1. Atlases (information in regard to places)
2. *World Almanac* (miscellaneous information on a wide variety of subjects)
3. *Statesman's Yearbook* (statistical information in regard to industries, commerce, and governments of the world)
4. *Congressional Record* (speeches and committee reports of Congress)

5. *Who's Who in America* (brief biographies of living persons of prominence in various fields of endeavor)

5. TEACHING PUPILS TO PREPARE AND GIVE ORAL AND WRITTEN REPORTS

Oral Reports.—Teaching pupils how to study involves giving them assistance in preparing specific assignments of many types. In connection with the study of a unit, pupils are often expected to make reports of their study to the class. The following is a list of suggestions prepared by the teachers of Simmons Junior High School, Aberdeen, South Dakota,[6] for the guidance of pupils in making oral reports:

A. Studying for your report:
   1. Select subject or topic on which you expect to talk. Examples: aviation, baseball, or a school party.
   2. Select a definite purpose that you want to accomplish in talking on this topic. Examples: to show the safety of modern aviation; to show the development that has been made in commercial aviation; to arouse interest in baseball; to get new members for my ball team; to tell about a big league baseball game that I saw; to arouse interest in attending the school party; or to explain the games that are to be played at the school party.
   3. Seek information that will help you:
      (a) Use your own store of information.
      (b) Read in the encyclopedias.
      (c) Read magazines and newspapers.
      (d) Read books in the library.
      (e) Interview persons who may be well informed on the subject.
      (f) To give you a broad background, gather much more information than you can use in your report.
   4. Record and assemble the information and materials that you can use in your report:
      (a) Use materials that are interesting to yourself.
      (b) Do not use materials which are already known to other members of the class.
      (c) Record information you expect to use on slips of paper.
      (d) Assemble pictures, diagrams, stories, and illustrations that will help you in presenting your report effectively.

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[6] William T. Gruhn and Constance Conner, "Planning a Program for Teaching Pupils How to Study," *High School Journal*, XXIII, 61-65.

B. Preparing your report:
   1. Prepare an effective introduction for your talk which will:
      (a) Arouse the interest of the class.
      (b) State the purpose of your report.
   2. Outline in logical order the main topics in your report:
      (a) Be sure each contributes to the purpose of your report.
      (b) Use ample information to explain each topic.
      (c) Use stories and examples to motivate interest in each topic.
   3. Prepare an effective summary or conclusion for your report which will:
      (a) Summarize the important things that you want the class to remember.
      (b) Leave a pleasant impression of your talk on the class.
   4. Prepare notes that will assist you in presenting the report:
      (a) These notes should be an outline of your report but not the report written out in full.
      (b) The notes should be written on small cards or slips of paper.
   5. Practice your report orally by yourself.
      (a) This should be done at home.
      (b) If you cannot practice at home, study notes thoroughly in school.

C. Presenting your report:
   1. Stand in the center of the front part of the room; you should be neither too near nor too far away from the class.
   2. Be careful of your posture.
   3. Look at the class while you are talking.
   4. Make your talk interesting by putting expression into what you say. Imagine you are conversing with a friend. Do not try to pitch your voice high, but talk naturally as in a conversation; this is a one-way conversation between you and the class.
   5. Refer to your notes but do not read them. Hold your notes so they do not detract from your report.

Written Reports.—In teaching pupils to prepare reports on a general topic, the first two sections in the foregoing outline are applicable. Additional instructions in regard to the form and style of the written paper should be given.

In a written report of an experiment in science, the following outline might be suggested to pupils:

1. Write a statement of what you are trying to find out (purpose of the experiment).

2. Describe the apparatus and materials used.
3. List the steps in the procedure.
4. Record the results.
5. State conclusions.
6. Make a statement of the implications of the conclusions in regard to the way people think and act.

6. Teaching Pupils to Outline and Summarize Reading Materials

Outlining Reading Materials.—An outline consists of a list of the main topics and subtopics arranged in the order in which the author develops them. The relationships of the details to the important topics are indicated by indentations and symbols. There are three general classes of outlines. The *topical* outline consists of a series of words or phrases that indicate in a definite order the topics discussed. The *sentence* outline employs complete sentences to state the topics. The *paragraph* outline gives a summary of each of the paragraphs in the selection. The topical outline is the most widely used in outlining reading materials. In a study of the form of the outline, the attention of the pupil should be called to the various symbols which may be used to indicate the relative importance of topics—ordinarily Roman numerals, capital letters, Arabic numerals, and small letters, in that order. The placing of topics of equal importance at the same distance from the margin also reveals the relative importance of the topics.

Outlining reading material serves to improve retention. It also requires the pupil to focus his attention upon thought relationships to the extent of distinguishing between essential and merely explanatory material. Students need to be taught the mechanical form of outlining. Some teachers give instruction in making an outline of reading materials in the following manner: (1) the teacher writes the outline of the first paragraph on the blackboard; (2) the teacher and the pupils cooperate in locating the main and subordinate topics in the second paragraph; (3) the pupils are assigned the task of outlining the remaining paragraphs.

Pupils should be instructed to state the main and subordinate ideas in their own words. Since most reading material has a definite form of organization, the student should be instructed to make an effort to identify paragraph topics. Since an understanding of the details is necessary to an understanding of the main paragraph topic, they should also be identified and listed as subordinate parts of the outline. As in the case of outlining reading materials, organizing notes on lectures serves the purposes of mastery, retention, and understanding. An alert, critical attitude of mind also tends to be fostered.

Writing Summaries.—There are many occasions in school and out when it is necessary for a person to give a short account of an article or book he has read, a lecture he has heard, or a picture he has seen. In an oral or written summary it is necessary to arrange the main topics and the supporting details in their proper relationships to each other. This act of organizing reading or lecture material improves retention and serves to clarify thinking. In teaching pupils to summarize what they read, the teacher should emphasize the fact that a summary should be confined to a concise report of the author's ideas. The person who gives the summary should use his own words in expressing the ideas of the author; to add or omit statements extends the discussion beyond the scope of a summary. The summary should be a miniature of the original.

The same mental processes involved in outlining are required in summarizing, namely the ability to select, relate, and emphasize the essential points, thus subordinating the minor details.

In teaching pupils to summarize what they read, it may be helpful for the teacher to suggest the following procedures:

1. Read the entire selection carefully to gain an understanding of the central theme.
2. Reread the selection. Underscore key words or make brief notes of the main points and supporting details.
3. Read your notes and expand them into sentences of your own. Avoid copying isolated sentences from the selection.
4. Read the selection again and compare it with your summary to make certain that no important points have been omitted, or no irrelevant detail has been included.
5. Reread your summary critically, to ascertain what revisions are necessary in order to express the main theme of the original selection clearly, concisely, and accurately.
6. Make a final draft of the summary, observing the standard form for written material.

Practice exercises may be assigned in which pupils apply these suggestions in summarizing brief selections or articles. The same general suggestions (those for writing summaries) are applicable to précis and abstract writing. As the pupils acquire greater skill, longer and more difficult selections may be assigned. In the latter years of high school pupils should be expected to summarize poems and write synopses of stories.

Questions, Problems, and Exercises

1. Of what value are general rules telling "how to study"? Make a list of general rules for the guidance of high school pupils in their study.
2. Make a list of rules for the guidance of pupils in their study of your teaching subject.
3. What specific study habits should the teacher assist the pupils in forming?
4. Suggest methods of teaching high school pupils how to use the library and other sources of information.
5. What study devices, such as outlining, can be utilized in making the study of high school pupils more effective?
6. Suggest how the teacher of a particular subject, such as history or science, can assist high school pupils in increasing their skill in reading.
7. Prepare a list of instructions for high school pupils to assist them in reading graphs and maps.
8. Suggest a plan for evaluating pupil growth in reading.
9. Make a list of the causes of poor reading habits among high school pupils.
10. What are the chief differences in the procedures of teaching pupils to write an abstract, a précis, and a summary?

Chapter 10

SOCIALIZED CLASS PROCEDURES

1. Class Recitation *versus* Class Discussion

Many people still think of classroom activity as consisting of teacher questions and student answers covering a preassigned unit of subject matter taken from a textbook. The objectives, or at least the outcomes, of that type of procedure are (1) to check on the degree to which the individual students have acquired temporarily the ability to recite facts taken from the assigned material, (2) to motivate study of the assigned material, and (3) to promote learning by verbal repetition and by listening to others recite.

Whatever may be achieved by the recitation in the way of testing a limited type of learning outcomes, it is a wasteful learning activity. Typical of what goes on in many classrooms is the following:

> The teacher sits or stands at the front of a classroom occupied by twenty-five boys and girls. A book is open on the teacher's desk near by, or perhaps he holds it in his hands. Perhaps it is a lesson plan that he holds instead of a book. In the corner at his right is a map on a tripod. The pupils seated at desks are scattered about the room. Some have slid under the desk somewhat, their backs adding hypotenuses to the right angles formed by the seat and the back. With a few sly exceptions their books are closed. They toy with pencils or with the book covers. A few are writing. One is looking over a vocabulary in a French book which is open on his desk. Some are gazing out of the window. Others are tracing initials and figures on the desks.
>
> The teacher is asking questions. He asks for a volunteer answer. A few hands are raised. "All right, William." William makes a brief answer, partly right. The teacher asks another question, assigning this one to John. John becomes engaged in the business of searching his memory, accompanying the process with the usual physical modes of expression. He looks intently at the book, his brow in a frown. After a pause, the question is passed on to Mary. Mary makes a rather fortunate guess, though a brief one. The teacher elaborates the reply. Harold expresses an interpretation slightly to the contrary. The teacher mildly and pleasantly explains his error. Another question is asked. Lillian does the best she can, concluding with: "Is that what you want?" Unfortunately it isn't; so Hazel is given a chance.

Hazel collects herself from a little mental wandering long enough to say, "I don't know that." The teacher is quite certain that some one must know it. Susan and Charlie strike out in the pinch, and at last the teacher in desperation exclaims: "Well, Margaret." Margaret always knows, but Margaret by this time has forgotten just how the question was worded. The exasperated teacher, now quite self-conscious, turns to Henry, who readily concedes his lack of preparation. "Can't any one tell me?" the teacher pleads. No one can; so the question is to be looked up for tomorrow. Certainly after going thus far, it must not be told to the class. No one makes note of it. William's book slips over the edge of the desk onto the floor. Lillian starts with a little "Oh," and then becomes amused at herself. Others are amused; one giggles. James looks at his watch, while Tom writes on the edge of his notebook, "My gosh, was it ever thus?" [1]

Limitations of the Recitation.—For the purposes of learning, the traditional recitation possesses a number of serious limitations. Among them the following may be mentioned:

There is a lack of cooperative effort. The relationship between individuals is principally one between the teacher and individual pupils in rotation. The relationship between pupils is one of competition, not cooperation. The responsibility of the pupil is to the teacher, not the group. The appeal is to rivalry, not to a spirit of mutual helpfulness. Pupils are trained to profit by the failures of their fellows. The concomitant outcomes of such activities, including the effect upon permanent interest in the subject, are not desirable.

Undesirable pupil-teacher attitudes are developed. The student not infrequently comes to think of the teacher as a taskmaster for whom unpleasant work is performed. He suffers from the teacher's chiding and low marks. Usually what feeling of common interest there is among the pupils of the class is one of mutual sympathy as among victims of a common aggressor—an attitude not favorable to wholehearted interest in learning activities, but indeed one which may upon occasion of real or imagined unfairness blaze into open resentment. The teacher finds it difficult if not almost impossible to become regarded as a guide and an aid to the learner—a friend and helper rather than a tyrannical inspector.

Such procedures do not generate pupil responsibility. Where traditional recitation procedures are employed, the learner comes to concentrate not upon his own growth or that of others but upon satisfying the demands, arbitrary or otherwise, of the teacher. One might think that only the teacher was to profit by what goes on and that pupils participate only because it is their misfortune to be in school. The responsibility for pupil growth seems to devolve upon the teacher. The student is primarily responsible for nothing except getting by. He conceals his weaknesses from the teacher as well as he can, thereby defeating efforts of the teacher to diagnose learning and to correct misunderstanding.

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[1] From *Modern Methods of Teaching*, by Harl R. Douglass, Boston: Houghton Mifflin Co., pp. 240-241.

It does not develop initiative and originality. There is not present in conventional reciting a favorable opportunity for developing initiative and originality. The teacher is the leader. He does all the planning. He does not ask for original ideas or initiative. He daily puts a premium upon obedience in learning the ideas of others. Initiative and resourcefulness are, in fact, repressed.

It rarely trains in independent thinking and judgment. No premium is placed upon open-mindedness, critical evaluation, or the development and exercise of judgment. In fact most commonly no great effort is made to promote understanding. In the effort to cover the "lesson" there is time only for quizzing for reproduction of words.

It does not develop healthy interest and attention. Because of the failure to provide for learner initiative, the lack of opportunity for discussion, and the lack of provision for individual expression and questions, the procedure is not conducive to the development of interest in the subject. Much more often just the opposite effect is produced. The subject-matter medium inherits the odium attached to the authoritative method. Very often the pupil feels no responsibility for an interest in what goes on except when he is called upon, and by that time has let his mind drift to other matters.

In recent years many teachers have recognized the limitations of the old recitation procedure, and various other types of activities have largely displaced it in the classroom, including more study and other learning activities and more discussion and other socializing group procedures. The remainder of this chapter will be devoted to the philosophy, principles, and procedures of these social group procedures.

2. Types and Values of Socialized Procedure

Realizing that these weaknesses of prevailing teaching exist, teachers of initiative and ability have searched for more effective teaching methods. A result of these experimental efforts has been the development of socializing class activity. This procedure tends to reduce formalism and superficiality, to effect naturalness, and to shift the impelling drive from outside to inside the pupil.

The socialization movement has taken several forms, thus making its contribution in divers directions. One is the recent tendency to introduce a more socialized type of subject matter—subject matter more intimately connected with the affairs of human life—economic, civic, social, hygienic, vocational, and personal—and chosen largely on the basis of its value as training for life situations. The development of more socialized extracurricular activities is another method of socialization. When properly organized and supervised these activities have come to be regarded as opportunities for training and for progress toward the objectives of the school as well as of society.

A third expression of the movement may be seen in the growing socialization of school management. This has manifested itself in the participation of pupils not only in the administration of so-called student activities but to some degree in the development of general school morale and control of discipline as well.

Two developments of the movement toward socialization have outwardly changed modern teaching methods. One has been socialization of the activity of the class period; the other is the organization of subject matter around *goals*, a method which directs the student's efforts by means of a new and entirely different type of working assignment. The first has come to be known as the "socialized recitation," the latter as the "project" method. This chapter is concerned with the socialized recitation. The project method will be treated in a later chapter. Socialized class procedure and the use of problems and projects in class are reactions to the artificiality, the repression, the perfunctoriness, the deadliness of the ordinary type of school recitation and the accompanying lack of provision for stimulating initiative, originality, and self-expression.

Forms of Socialized Class Procedure.—In general, socialized group procedures fall into one or the other of two classes. To one of these types the term *formal* or *institutional* may be applied; the other may be called *informal* or *spontaneous*.

In the formal or institutional type, the pattern of the class organization is similar to that of some existing type, e.g., a city council, a board of directors, a legislature. A class in English may become a dramatic or a literary club, or the editorial staff of a newspaper.

The informal or spontaneous type involves no special organization. In fact it may grow naturally out of the recitation. Discussion is encouraged. The instructor recedes from the center of attention. Students learn to respond to one another. Cooperative work is encouraged. The goal of pleasing the teacher is replaced by goals of child interest, such as satisfying curiosity or the desire for self-expression. Plans for further learning activities are formulated by the class. Cooperative effort involving division and allocation of responsibilities may evolve. A feeling of "we-ness" develops.

Aims and Values of Socialized Procedure.—Skillful use of socialized procedure will tend to:

1. Encourage the pupil's feeling of responsibility for his own progress.
2. Provide a favorable situation for the growth of good will between pupil and teacher, thus humanizing the unnatural role in which the teacher is usually cast.
3. Cause the pupil to focus attention upon the goals of the work being done and not upon satisfying the teacher and securing good grades.
4. Develop in the pupil the attitude and habit of helpfulness—the desire to promote the objectives of the group.
5. Develop skill in cooperation and suppress individualistic tendencies which may develop ill will.
6. Develop the habit and power of initiative and self-reliance.
7. Encourage more effective methods of work, e.g., the use of outside references and the project method.
8. Promote skill in clear thinking, in proper methods of thinking procedure, and awaken an attitude of open-mindedness and suspended judgment.
9. Foster skill in oral expression through interested discussion.
10. Develop ability to use freedom profitably—to manage one's self through the gradual introduction to responsibility and the gradual removal of restraint and compulsion.
11. Acquire certain conventions and social attitudes, such as consideration for others, politeness, willingness to give and take criticism, etc.
12. Create a more impelling interest in learning the subject through more natural participation of the pupil in discussions and by giving the pupil some self-direction of his energies and his activities.
13. Make the class period contribute more effectively to mastery of the subject matter through the use of a correct psychological

approach and the consequent stimulation of a higher level of attention.

14. Formulate procedure more in the light of the needs of pupil nature and the satisfaction of natural tendencies such as inclination to construct and manage, desire for imitation and dramatization, preference for novelty and variety, and propensity for group endeavor.
15. Provide opportunity for pupil-teacher relations to be carried out in a natural manner which will give the teacher a better understanding of the pupil's mind at work.
16. Provide natural stimuli for the pupil to excel, to wish to lead, and to contribute his best to the class procedure.

The foregoing aims it should be realized are stated largely in terms of growth of the learner rather than in terms of "mastery" of subject matter, e.g., not in terms of the temporary acquisition of historical facts, but in terms of such things as attitude, ideals, and skills contributing to good citizenship and healthy, vigorous personality.

Such a philosophy does not contemplate that students will not learn history, algebra, literature, or other subject matter. Indeed it is to be expected that there will be increased interest in subject matter, more wholehearted learning activity, more complete understanding, and more permanent learning and interest. Experimental investigations indicate that where socialized procedures are introduced, learners make higher scores on subject-matter tests.

3. Operating the Formal Type of Socialized Class Procedure

Selecting and Planning.—In the employment of a formal plan of socialized class procedure, care must be exercised in so selecting a type of pattern that learning will be facilitated, guided, and stimulated to be as great and as effective as possible. This means that the teacher must understand the nature and purposes of the subject matter which are likely to be involved. Various alternative patterns of organization, e.g., a "city council" or a "discussion club," must be evaluated in those terms.

It is not easy to formulate any general rules as to what type of organization is most effective for any type of subject matter. One teacher in reviewing the work in history has his class imitate the procedure commonly followed in an oral examination for candidates for the degree of master of arts in universities. Various candidates in turn share responsibility for certain portions of history—movements, epochs, or other units—and are questioned carefully by other members of the class, who constitute the committee. Another teacher employs successfully the organization of a civil court to carry on work in a geometry class. A teacher in European history organizes a dramatic club and stages a one-act play under the authorship and leadership of selected members of the class. Still another teacher frequently divides his classes in French into groups which select leaders who, through planning and guiding the mastery of certain portions of translations, take responsibility for promoting the progress of the respective groups. In each of these instances the organization is functional for the purposes of the class; details which do not aid learning are excluded.

Young people find a certain amount of glamour in organization and formal procedures, and a thrill that comes from elections. This must be guarded against, lest it misdirect the activities and interests of the pupils. Every effort should be made to focus interest on the class work and its objective rather than on organization as such. Problems arise as the novelty wears off. Certainly the enjoyment gained from using a variety of procedures is both legitimate and desirable. Even adults demand this. However, the extension and complication of organization can hardly be justified on the basis of the pleasure young people may take in it.

At no time should there be an elaborate organization, useless machinery, or an excess of officers or committees casting about for work to do. There should be few standing committees. Committees should be appointed only as the need for them arises. They should be appointed for special tasks and discharged when these tasks are completed.

The teacher must be able to think through the degree to which a possible plan of organization will contribute to learning objectives. He must be able to anticipate how well the work may be facilitated by this procedure, to foresee the results with the class, to estimate its suitability, and to provide for whatever adaptations may be advisable. If the form of some existing organization is to be employed, it is usually profitable as a basis for class organization to have a committee or the entire class gather pertinent information concerning it. Occasionally different committees may study two or more organizations and report on them, with recommendations to the class.

In many instances it may not seem wise to imitate any adult institutional organization. It may be better to develop one better suited to promoting learning activities. If this is done the mistake should be avoided of spending too much time on planning and developing the organization through committee work on the constitution and by-laws. The reading, discussion, and adoption section by section of the constitution and law by law of the by-laws can easily become an end in itself. Extreme care should be taken in planning this preliminary work lest an entire class period be spent in the discussion of one or two sections. Often a committee can be appointed which will work out the plan of organization within a day and report on it in class the next day. The plan is then adopted, officers are elected, and work is outlined and begun—sometimes in one or two class periods.

In developing or adopting a plan of organization the teacher must be patient with the efforts of immature learners and avoid displaying irritation and impatience, even when it is necessary to speed things up a bit. The final result need not be entirely satisfactory to the teacher, but it certainly should not be his creation through the medium of puppets. Young people must be given the privilege of learning through mistakes and by mutual criticism.

The opportunity for effective teacher guidance will be found in committee work in and out of class. It is usually better for the teacher to point out defects and the need for modification of proposals rather than to assume too much responsibility for constructive work. Where it seems necessary to assume responsibility, the teacher's suggestions should be considered on their merits by the committee or the class, without the exertion of undue influence. A good sense of proportion will assist the teacher in preventing the class from making the work of organization too great a burden. They should also be led to feel that changes and modifications may be made from time to time as needed.

Student Officers.—Very much of the ultimate success of the plan depends upon the examples and standards set in selecting the first set of officers. The instructor should stimulate the class to deliberate upon the duties of the various officers, and to select candidates who will in all probability make excellent ones. It is excusable and probably advisable in some classes for the teacher to appoint the first staff with the advice and consent of a committee elected by the class.

However this type of socialized recitation may contribute to increased effectiveness, it is never to be regarded as a means for making teaching easier for the teacher. The teacher and the student officers should plan carefully in making a start. It is quite necessary, especially at the outset, that teacher and chairman or presiding officer confer frequently as to the plan of procedure.

Teacher-Officer Conferences.—If the teacher is to transfer part of his responsibility for leadership activities to student leaders, there will usually be need for special coaching of the students. There will be need of discussing with the chairman or student leader such points as the following:

1. Nature of the activities to be undertaken
2. Relative emphasis upon various topics and important points
3. Procedure contributing to an equalization of opportunities and responsibilities within the class
4. Plans for obtaining and retaining the cooperation of indifferent members
5. Advisability of the use of visual and auditory aids
6. Procedures for fixing facts and developing skills
7. Procedures for summaries and diagnosis of difficulties
8. Adaptation of activities to the needs, abilities, and interests of individuals

Certainly at the outset, and to a limited extent later on, it is wise for the chairman and the teacher to work out a fairly detailed plan of procedure, much like a lesson plan. As soon as possible the chairman should take the initiative in such plans, work them out, and then present them to the teacher for approval and suggestion. The detail and the frequency of these conferences will vary with the maturity of the class, with the resourcefulness and personality of the officers, and with the nature of the work to be done.

The teacher should avoid dominating the procedure. Officers must not be permitted to reach the conclusion that they are mere puppets, nor that they are ignored or repressed. The success of the plan will be proportionate to their feeling that they have assumed responsibility for the program and have a prominent part in managing it.

Distribution of Leadership Opportunities.—The opportunities and responsibilities of leadership should be widely distributed. Even the least promising and indifferent pupils should have some part in it. But frequent changes in student officers should not be made. The training of each new set of officers is the first duty of the teacher, though the necessity of this will diminish as the pupils have opportunity to witness good procedures and standards.

There will be many occasions on which it will seem advisable to employ an organization or formal plan for merely a portion of a class period or for one or two class periods. The formal plan may be advantageously employed in current events classes given once a week, or in an occasional review lesson.

4. OPERATING THE INFORMAL TYPE OF SOCIALIZED CLASS PROCEDURE

Values of Informal Procedures.—It should be obvious that the formal type of organization calls for expenditure of considerable time in planning and developing the organization. Much of that activity will constitute effective learning activity, but some of it may not contribute materially to the objectives of the particular class. For this and other reasons the informal plan of procedure has much to recommend it as a superior approach.

Often class procedure may gravitate toward the informal, socialized approach without definite planning or radical reorganization. Few preliminaries and no special machinery are required. Indeed, it is the natural tendency for recitations to become socialized in some respects, and only the formalism employed by the teacher tends to prevent this. A skillful teacher can make the transition with no consciousness on the part of the pupils that any innovation is taking place. The class control only needs to become more natural, and the amount of student responsibility delegated may be adjusted to the apparent chance for success.

The instructor remains in a position where leadership may be readily exercised at any time and with little ostentation. The amount of waste may be minimized, since the directing hand of the teacher may function at the proper moment and with little or no appearance of intrusion. The interpretation and judgment of the instructor are then more readily exercised from time to time, and a better opportunity is afforded for a skillful yet unobtrusive guiding of the discussion toward the important points and into the problems of most worth. The instructor may at any time raise a question and withdraw to the background, simply acting as a chairman or referee and permitting the discussion to develop in a natural manner. Occasionally it will be necessary to give a new direction to the trend of the discussion, occasionally to suggest a new angle of the problem or a new problem, and occasionally to draw into the discussion some who have not been participating.

Where an informal procedure is employed, its very naturalness and spontaneity recommend it. It is not unlike the seminar group, or a committee meeting. Members speak when they wish to express their ideas, rather than when they are called upon. This opportunity for participation at the right moment serves to stimulate interest. Probably because of the opportunity, and because of the natural and psychological development of the topic under discussion, interest evinced by members of such groups is distinctly superior to that of the ordinary recitation. It is only natural that the interest should be greater. The informal group plan is well adapted to small groups; with large groups it is difficult to prevent confusion.

Using the Informal Plan.—When the informal socialized class procedures are employed, certain suggestions and cautions may well be kept in mind. The instructor should constantly restrain himself from a natural but unfortunate tendency to monopolize the discussion. Many instructors are unable to stand by and see the work apparently "go to pot." It is natural for the teacher to overestimate the importance of and need for his own contributions. It is difficult to realize that the shortest way may not, in the long run, prove to be the most economical way. The learners must participate, even though they do make mistakes. Even the most scholarly presentation and explanation by the instructor often do not result in the most satisfactory learning. The extra-subject-matter values of the socialized recitation are important and should not be lost sight of. The development of initiative, thinking power, right habits, power of expression, ideals of polite conversation, cooperativeness, and similar special outcomes of the socialized procedure should not be lost in the process of acquiring a better grasp of information.

In addition, provision must be made at the very outset for training the class in proper methods of procedure. Not more than one student should talk at once, each being permitted to conclude his remarks without interruption or interference. The time element for worth-while discussion should be remembered. Courtesy, kindliness, and fairness must be observed. Scolding or sarcasm should not be resorted to; a smile or a look of disapproval may serve much better than words. The integrity of the group must be preserved—the group spirit—the "we" spirit. All this requires skillful and tactful management, even more so than in the traditional recitation.

The teacher needs to give some thought and attention in advance to each day's class period. Careful daily planning and knowledge of subject matter are a prerequisite for the instructor. It is necessary that he acquire skill in directing the trend of the discussion by raising, defining, and modifying questions and problems and by keeping the class as much as possible in a problem-solving attitude. He should refrain from settling questions by authority; rather he should lead the class to think them through. He must give attention to developing a truly socialized situation. One evidence of a truly socialized class is that members of the group address themselves to the group rather than to the instructor. The teacher-individual relation must give way to a project-group relation. Until this result is accomplished at least in part, no truly socialized atmosphere can be obtained; it is often difficult to accomplish, and the instructor must be aware of this need from the start. The project-group relation is not brought about so much by precept as by making the discussion of such a nature that it will be natural for each pupil to address his fellows. A favorable seating arrangement, such as around a table or in a circle, is very useful.

5. Commonly Used Types of Discussion Procedures

Panel Discussions.—One form of socialized procedure employed by many teachers in various subjects with excellent results is the panel discussion. It may be employed both with controversial subjects and with non-controversial materials. When it is employed with a controversial subject, an effort should be made so to select members of the panel of discussion leaders that each of the major probable positions on the question will be presented, including the neutral or middle-of-the-road position as well as the different extreme positions. Care should be taken to see that all sides have equally able advocates and that there is opportunity for rebuttal.

The panel discussion may be employed to present different parts of a unit, problem, question, or topic in which there is no central controversy, e.g., different portions of a historical period or development or a topic in science or different aspects of a play or a short story. Whether a summary of the discussion is necessary or advisable depends upon the nature of the particular topic.

Until members of the class acquire experience with the panel discussion, the teacher should act as moderator or chairman. Later students selected for the purpose may take over and direct the discussion. Almost invariably the discussion should be followed by a critical evaluation or summary by the teacher or one of the pupils. The spirit and purpose of this evaluation or follow-up is twofold: (1) to bring out points neglected in the discussion and (2) to enable participants in future discussions to adopt the merits and avoid the weaknesses of the discussion just held.

The panel discussion often is referred to by some other title such as *town-hall discussion, junior town meeting, group discussion,* or *forum.* Debates in class are often so organized as to include open discussion after the leaders have participated. There is a national Junior Town Meeting League which fosters discussion of current affairs by youth. The organization issues small publications, including a handbook on discussion techniques for school forums, class discussions, and youth groups.

Among the more important suggestions and techniques recommended in the handbook of the Junior Town Meeting League are the following:

1. If a speech is necessary (either written or delivered from notes), it may include the following elements:
   (a) Through a brief introduction, beginning with a simple illustration of what the problem means, the scope of the speech should be limited, difficult terms defined, and the stand being taken made clear. Use one or more brief and pointed remarks that indicate clearly the exact viewpoint of the speaker and how he differs from others.
   (b) The main body of the speech should present a logically ordered resume of the essential evidence upon which the speaker's view is based and the inferences or deductions drawn from this evidence.
   (c) The conclusion need not be a summary of the points made—it should, however, make clear how the facts and the inferences lead to the speaker's convictions on the question under discussion.
2. Tell stories or give illustrations in a friendly, rather confidential manner.
3. Use at all times a conversational—not an oratorical—style. Even though you may be on a platform, talk *with* and not to your audience. Or, talk as though to *one* listener, personally and sincerely.
4. Use everyday language. If the five-cent word will say it, use it. It will be much more effective than the ten-dollar word.
5. Keep remarks as objective as possible, remembering always to label opinions as such.
6. Make all statements explicit and concise, and address them directly to the audience—not to any individual, even if in answer to his question.
7. Seek responses from the audience members—applause, laughter, or even cries of protest.
8. Do not be disturbed by an emotional outburst from the audience. When it has subsided, proceed from where the statement was interrupted.
9. Appear at ease—relaxed. A deep breath before speaking is a good rule to follow.

10. Dispense with formalities. Plunge at once into the remarks to be made. Don't say, "Mr. Chairman, distinguished guests, worthy opponents, ladies, and gentlemen."
11. Stand firm and still—don't move about. Put all energies into making a forceful statement. If seated, speak with force and precision but at less length at any one time than if speaking from a standing position.
12. Discussion is more stimulating than speeches. Jump in eagerly with your contribution when you have something to say. Have a good time.

Preparing the Audience

Aim toward:

1. *Accuracy* in speech and thought. Don't generalize or jump to hasty conclusions. Define your terms.
2. *Open-mindedness* or flexibility of point of view. Be willing to alter your opinion if the evidence changes. Don't argue for argument's sake alone.
3. *Tolerance* toward the opinions of others.
4. *Skepticism* toward information which is new and untried, or secondhand. Stick to tested facts. Challenge the authority behind a statement.
5. *Intellectual honesty*—the ability or willingness to stick to exact factual material regardless of the strength of previously presented views or ideas. Don't rely upon emotional arguments. Don't appeal to prejudices.
6. *Suspended judgment:* Be willing to hold off your final judgment on a problem—or some aspect of it—if more facts are known to exist.[2]

6. FUNDAMENTAL PRINCIPLES

Dangers to Be Avoided.—Whatever type of socialized class procedure is to be employed, certain cautions should be avoided. Successful socialization is no task to be attempted by a weak teacher. Teachers without good qualities of leadership, ingenuity, and industry should be satisfied with other methods of teaching. Among the cautions which may well be kept in mind are the following:

1. Avoid the practice of merely turning the class over to bright pupils. This does not develop cooperativeness and does not challenge the other learners.
2. Be careful that the timid or lazy learner does not become a mere listener; draw all learners into the discussion.

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[2] *Make Youth Discussion Conscious,* Columbus, O.: The Junior Town Meeting League.

3. Avoid overemphasis upon excessive formality and technical parliamentary procedure.
4. Avoid monopolization of class time by a few learners.
5. Do not permit excessive rambling discussions and pointless digression.
6. Controversy in the class is frequently desirable, but do not permit it to result in fixed attitudes or prejudices.
7. Above all, guard against excessive supervision and teacher domination.
8. Be careful that the major items or points in the course are not omitted or neglected.
9. Do not worry if matters of minor importance are not all covered in class discussions.
10. Avoid at all times superficial or ineffective socialization which serves in no way to facilitate dealing with the work at hand.
11. Avoid the development on the part of learners, by reason of their authority while in office or of participation in controversy, of unsocial habits, manners, or attitudes.
12. Insist upon the growth of the students toward self-discipline; socialization is not anarchy.

Some of these points which merit special consideration are discussed in the following paragraphs.

Avoid Monopolization by a Few Learners.—In all socialized or group discussions there is a danger that the more intelligent and aggressive pupils will do all of the talking. Whenever human beings gather in groups for any purpose, it is not long before one or two have assumed leadership and pushed others more or less into the background. This is readily noticeable in adult business, civic, and social groups, as well as among children. The traditional recitation suffers from the tendency of a few pupils to monopolize the class hour. If not carefully managed, the socialized recitation may easily make matters worse, since the teacher is no longer in a position to encourage all members of the class to participate. This situation has frequently been encountered where socialized procedures have been employed. Domineering and officious pupils may cause such a situation, and even conscientious pupils who have their minds set on the success of the procedure may disrupt the plan.

When using the formal plan, the student chairman or leader must devise means by which the too-active individual may be assisted in playing his proper role. Positive means are better than negative. The teacher must be alert to assist the chairman or leader should the latter fail to sense a situation or meet the challenge of an occasion. In private conferences with the obtrusive pupil, conducted in a frank, friendly manner, the advisability of more evenly distributed participation can be pointed out.

Under the informal plan, the matter can be handled directly by the teacher by addressing himself less frequently to those who tend to monopolize and more frequently to the less active. If the situation is created by a domineering pupil who fails to respond to ordinary strategy in the routine of the class, he should probably be handled like the occasional pupil who is a clown or a humorist. A frank private conference should be arranged. The pupil who will not "socialize" after such procedure has been resorted to and appeal has been made for cooperation and fair play, should be subjected to such measures as are commonly employed for disciplinary problems where the usual recitation plan is being followed.

See to it that the slow or temperamental pupil is not discouraged. Where the formal plan of procedure is employed, special coaching of the student leader along this line is often necessary.

Avoid Irrelevant and Ineffective Discussion.—There is a need for guidance by one who has a sense of values and proportion. Careful coaching of student leaders will operate to reduce the amount of pointless discussion. It will become necessary for the teacher at times to participate in the discussion long enough to direct the thinking back into more profitable channels. Of course this must be skillfully though firmly done, with no evidence of irritation. If learners were highly skilled in discussion there would be much less need for socialized procedures.

Much superficial discussion can be avoided if it is preceded by a careful and thorough examination and study of the facts pertaining to the topic.

Avoid the Dangers to Which Controversy Is Susceptible.—Controversy leads often to emotionalism, clouded thinking, and premature and fixed conclusions. It may serve to fix upon participants and even upon listeners definite attitudes on questions, and to blind them to those considerations which do not contribute to their point of view. Often a controversy reaches a point where no new material is developed, and continues as a reiteration of previously considered points and arguments. Also, if not managed well, it tends at times to transcend the bounds of polite discussion and to engender individualistic acts and feelings which contribute nothing to the development of that social spirit which should characterize all socialized procedure.

Avoid Dominating the Discussion.—The teacher must studiously avoid cooling student interest and depriving students of their opportunities to think for themselves and to develop initiative and capacity for judgment. In the formal plan, teacher control must stop short of that point where the class begins to feel that their organization is a mere show and that they are being hoodwinked. Teacher counsel and direction must be as unobtrusive as possible in order to leave pupils with the idea they are bearing the major responsibility. In case of doubt, it is usually safe to err by throwing more responsibility on the pupil.

In using the informal plan the teacher must stifle the impulse to rush to the rescue, to set the wrong thing straight, to overshadow the officers, and to assert authority. In either the formal or the informal type of organization, acting as an ordinary member of the group may be most helpful. Immediate withdrawal is advisable after the necessary guidance has been given.

Exercise Care to Obtain Adequate Selection and Organization of Subject Matter and Proportionate Emphasis on Important Points.—While following the text or course of study closely is not essential or even highly desirable, it is essential not to omit or neglect the items and sections which contribute most materially to the objectives of teaching or studying the subject. The teacher must assist students in achieving adequate and proportionate emphasis.

In many classes where socialized methods have been used, a "summarizer" is employed who at the close of the period organizes and sums up the discussion, giving emphasis to points needing class attention. A student, the leader, or the teacher may serve as "summarizer."

Thoroughness in important matters must be achieved. Drill is necessary many times in a socialized recitation. It can be made more interesting by suggesting that students drill each other by means of games, as a preparation for a group contest, or in order to reach a certain standard or pass a certain test.

Avoid Superficial and Nominal Socialization.—There is no merit in the mere form of socialization. Merely turning a class over to student representatives or permitting students to conduct recitations does not in any sense of the word constitute socialization. There is always the tendency to emphasize the showy, the spectacular, the unusual, and the material phase of any new movement in teaching. Neither the real objectives of the socialized recitation nor the subject being taught can be disregarded. Where this is done, the "socialized recitation" will soon degenerate into a type of activity of less value than the conventional recitation, the activity consisting largely of mechanical and trivial corrections of students by one another.

This caution applies particularly to the use of some formal pattern of organization for socialization. Where the mere form is imitated, little understanding of the real spirit and fundamental principles of the movement result. The educational results prove unsatisfactory, causing parents and teachers soon to lose faith, regard the procedure as only another fad, and thus fail to realize its true social and educational significance.

Certainly a discussion which consists chiefly of following parliamentary procedure, heckling, or arguing over trivialities is not socialized procedure. Its net outcome may be anti-socialization. If true socialization is to be accomplished, care must be taken to see that cliques, inner circles, and groups of friends among the students do not operate to control the selection of officers or to interfere with normal democratic discussions.

Problems of Discipline.—The problems of maintaining conditions favorable to effective learning are not eliminated in socialized procedure. Socialized procedure does not mean disorder. It means, rather, an orderly program carried on in an orderly manner by orderly students. Socialization does not contemplate permitting the class to follow its own devices and whims. Of course there will often be confusion, when socialized methods are introduced, while new procedures and new responsibilities are being learned. This is a usual characteristic of any new plan of procedure, and final judgment should await a fair trial (one which will give the teacher and student time to develop proficiency in the method.)

Teachers will need to experiment with the new method and gradually to perfect their skill in its use. Pupils too will require some time to perfect the use of their privileges of initiative and to grow into their responsibilities. In many instances the use of a socialized method will mean a temporary loss in "discipline," and possibly in subject-matter learning as well. However, this is only the first step toward an ultimate gain of the powers of independent study and of permanent interests, which will continue to function long after the special subject matter has sunk below the power of recall.

Questions, Problems, and Exercises

1. In the high school in which you teach (or from which you graduated), how much of the class period do you think teachers spend on the average in question-and-answer review of the day's "lesson"?
2. List in the order of their importance the weaknesses of the traditional "recitation."
3. List in the order of their importance to learning the functions or aims of the daily class period.
4. List in the order of their importance the values of "socialized" procedure.
5. List in the order of importance the dangers or weaknesses of the formal plan of socialized procedure; (b) the informal plan of socialized procedure.
6. For the principal subject you expect to teach, what plans of socialized procedure do you think you would prefer to use? Why? Tell how you would carry them into effect.
7. Discuss the "panel" device for group discussions. For what kind of subject matter is it most useful? How would you use it in teaching your principal subject?
8. What do you think of the statement that "discussion takes too much time," so that only part of the "lesson" can be covered in class?
9. For the purpose of teaching your principal subject, compare the formal and the informal plan of socialized procedure.
10. Indicate how you would avoid the main difficulties which may be expected in group discussion.

Chapter 11

TEACHING UNITS OF LEARNING

1. Concepts of Learning Units

The choice of a particular method of instruction is determined by several factors which vary from one classroom situation to another. The objectives of the course, the nature and size of the class, the ability and personality of the teacher, and the availability and type of instructional materials are important considerations in deciding which method should be employed in a given situation. Since these are highly variable factors, it is evident that there is no one best method of teaching. The efficacy of any method can be evaluated only in terms of the results sought.

There are, however, certain psychological principles of learning which underlie effective teaching procedures. These constitute the basic or constant factors of all learning. Some of these are (1) the presence of a problem which compels the learner to seek a solution; (2) active, meaningful participation of the learner in seeking and finding the solution to the problem; and (3) awareness on the part of the learner that through his acquisition of a skill or understanding he has found a solution to the problem and thereby has acquired a new control or mastery of a situation which confronts him.

The Emergence of the Unit Concept.—Cognizant of unsatisfactory learning resulting from prevailing classroom practices, various leaders of educational thought have formulated plans for organizing and teaching learning units which are more comprehensive in scope than those utilized in the daily recitation. Prominent among the earlier unit plans were those outlined by Charles A. McMurray and Frank M. McMurray,[1] Harry L. Miller,[2] Henry C. Morrison, and William H. Kilpatrick. These proponents of teaching procedures based upon the organization of learning into larger units were influenced by some of the educational philosophies which prevailed at that time. Two of these were (1) Herbart's "sequence of learning" plan, starting with the child's experiences and observations of everyday phenomena and leading to a general concept and its application, and (2) Dewey's analysis of a complete act of thought (or complete learning experience) into (a) a felt difficulty, (b) its location and definition, (c) suggestion of a possible solution, (d) development by reasoning of the bearings of the suggestion, and (e) further observation and experience leading to acceptance or rejection of the suggested solution.

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[1] *The Method of the Recitation.*

[2] *Creative Learning and Teaching.*

The inherent unity of the human personality as revealed by modern science has also given impetus to the endeavors of educators to promote unity in the learning process. Some of the evolving concepts of human development are:[3]

1. *The child is a unit biologically.*

Evidence from the science of embryology reveals that from the moment of conception the organism is a whole, from which parts emerge by a process of differentiation or individuation. With the whole organism as a frame of reference, the various organs including the brain come into existence. The child is an integrated unit from the beginning. Education faces the task of conserving or preserving the original unity from the forces which tend to alter it, as it grows by differentiation.

2. *The child is a psychological unit.*

Mental development is not a matter of putting bits of experience together to form knowledge. Experiences emerge from the mind by a process of differentiation. Experiences do not make the mind; the mind makes its experiences. The total thought pattern is a function of the whole rather than the parts. The learning bonds are the relationships between parts and their wholes.

3. *The child is a sociological unit.*

The child and his social environment are the interacting parts of an organic unit. The welfare of each part is derived from the welfare of the whole. Social progress is dependent upon the maintenance of ethical relationships among all the parts. No one segment of humanity can be suppressed without jeopardizing the total pattern of social behavior.

Some of the early unit plans of teaching attracted considerable attention, and the Morrison plan won fairly wide acceptance. They failed to become the predominant classroom practice because of the prevailing stimulus-response concept of learning, with its emphasis upon the mastery of isolated bits of knowledge rather than upon total patterns of learning. The existing organization of the high school, built around the traditional daily recitation idea, presented a practical barrier to the adoption of the unit method. More significant than either of these reasons, however, was the reliance of teachers upon a single textbook as the sole basis of instruction.

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[3] *Cooperation: Principles and Practices,* Eleventh Yearbook, Department of Supervisors and Directors of Instruction, National Education Association, pp. 52-60.

As a consequence of acceptance of the *Gestalt* concept of the nature of learning, the unit idea grew in favor as a guide in the organization of curricular materials, even though methods of teaching were not greatly modified from those used in textbook teaching. The concepts of *Gestalt* psychology which served to bring about refinements in the unit method of teaching were: (1) that the nature of the total learning situation is determined not merely by the sum of the elements which comprise it, but rather by the relationships which exist among the different parts; (2) that the parts of a learning situation have meaning only in terms of their relations to each other and to the whole; and (3) that the unifying factor in organizing the elements of a learning situation is the purpose of the learner.

Another factor which contributed to acceptance of the unit method of teaching was a growing recognition of the need for more adequate provisions for individual differences. The failure of various administrative plans, such as ability grouping, to provide satisfactory means of individualizing instruction caused many leaders of educational thought to fix upon the classroom teacher as the proper person to meet the needs of individual pupils. As a result directed study, differentiated assignments, enriched curricula, and the unit method became the vogue. One of the main arguments advanced for use of the unit method of teaching was its value in providing for individual differences. The possibilities of the unit in this respect have too seldom been realized. The opportunity for different pupils to work on different aspects of a unit presents an excellent method of providing for the individual abilities, interests, and needs of pupils. More significant, however, is the demonstrated value of individual projects in making adequate provision for individual differences.

Different Concepts of the Unit.—A superficial analysis of the various unit plans of teaching may lead to the conclusion that they are essentially alike, except for terminology. The unit plans do possess a certain similarity in that all of them recognize larger units of learning than those of the daily recitation and are therefore characterized by the long-term assignment. The different plans, however, are identified with different educational philosophies and psychologies of learning. For example, the McMurrays and Morrison regarded the unifying factor of a unit as residing within the body of the subject matter, while Kilpatrick's project plan recognized the purpose of the learner as the integrating factor in the organization of learning materials.

Definitions of Unit.—A review of a few statements of the meaning of a unit as conceived by various writers may serve to reveal some of the fundamental characteristics of the unit concept.

The definition of the unit by Morrison[4] reveals the *subject-matter emphasis.* He states: "A learning unit is a comprehensive and significant aspect of the environment of an organized science, of an art, or of conduct which being learned results in an adaptation of personality."

The teachers[5] of the Lincoln School of Teachers College, Columbia University, formulated a definition of the unit which represents the *child-interest point of view,* as follows: "A unit of work is a series of worth-while experiences bound together around some central theme of child interest."

Grinstead[6] makes a useful *distinction between the learning unit and the teaching unit,* as follows: "When the individual desires to become master of some *type* of situation, rather than to meet a *particular* situation, and centers his energies upon the attainment of that mastery—the enterprise becomes *a unit of learning.* When the learner in order to attain the goal of a unit of learning, accepts the direction of a teacher, to whom he looks for help in the selection of his activities, the clarification of his objectives, and the appropriation of success, the unit of learning becomes also a *teaching* unit."

The *characteristics of a unit* are well stated by Mursell,[7] who says: "Learning should be organized in terms of undertakings which seem real and compelling and valuable to the learner, which engage his active purpose, which confront him with a significant challenge, and which lead to deeper and wider insights, more discriminating attitudes and more adequate skills."

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[4] Henry C. Morrison, *The Practice of Teaching in the Secondary Schools,* 2nd ed., pp. 24-25.

[5] Katherine L. Keeler and Mayme Sweet, *Units of Work,* p. 1.

[6] Wren Jones Grinstead, "The Unit of Learning: Its Meaning and Principles," *Educational Outlook,* VII, 9-20.

[7] James L. Mursell, *Successful Teaching,* p. 37.

Reference to the *size of the unit* is made in the following definition:[8] "A unit of instruction may be thought of as a set of activities and experiences centered around a problem large enough to extend through an entire semester (or even a year), or it may be thought of as a set of activities and experiences around a very small problem of living and life which will occupy a much shorter period of time. Neither size nor time is an important characteristic of a unit of instruction, however."

Jones, Grizzell, and Grinstead[9] emphasize the *learning product* in their statement of a unit as follows: "The unit of learning consists of a group or chain of planned, coordinated activities undertaken by the learner in order to obtain control over a type of life situation. The unifying principle is not the logical organization of the activities themselves, often thought of as subject matter, nor a center of child interest, but the learning product to be achieved. Thus learning production is not merely a skill, a habit, an attitude, etc., but such an integrated combination of these as will result in an adjustment of the individual to a life situation."

Types of Units.—In order to clarify further the terminology used in discussions of the unit plan, it may be serviceable to classify the different types of units. Units may be classified upon several bases, as follows:

Base	Types of Units
1. Scope	(a) Major, coordinate subdivision of one subject, e.g., unit on reconstruction in American history course
	(b) Major coordinate subdivision of two or more subjects. The material may be correlated or fused around some central problem, e.g., a unit on "How the Early American Indian Lived." Unit may utilize materials from American history, art, music, and English
	(c) Comprehensive division of field of knowledge organized in such a manner as to lead to important generalizations

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[8] F. C. Wooton, "The Theoretical Basis of the Unit of Instruction" (mimeographed), p. 2.

[9] Arthur J. Jones, E. D. Grizzell, and Wren Jones Grinstead, *Principles of Unit Construction*, p. 19.

Base		Types of Units
2. Unifying element or principle	(a)	Logical subject-matter organization, e.g., McMurray, Morrison, Miller, and Dalton plans
	(b)	Child interest or experience, e.g., project problem, etc.
	(c)	Composite, utilizing best features of (a) and (b), e.g., that suggested by Umstattd
	(d)	Learning product—e.g., unit of adaptation suggested by Jones, Grizzell, and Grinstead
3. Outcomes (as suggested by Morrison)	(a)	Science type
	(b)	Appreciation type
	(c)	Practical arts type
	(d)	Language arts type
4. Persons involved in planning	(a)	Resource unit—group of teachers
	(b)	Teaching unit—individual teacher
	(c)	Learning unit—students and teacher

2. Representative Plans for Teaching Units

Numerous plans for teaching each of the chief types of units of learning have been proposed. These have been described in detail in other publications. Space limitations forbid more than a brief summary in this chapter of the main types of units. The Morrison plan is typical of those suggested for teaching a *subject-matter unit.* The project method is representative of the plans designed to teach the *child-interest unit.* The *resource unit,* which in reality does not constitute a distinctive type, represents the modern approach to *planning* a unit in that it is a cooperative endeavor of a group of teachers to provide a reservoir of information, ideas, materials, and procedures upon which an individual teacher can draw in planning a teaching unit. The resource unit has been discussed in Chapter 7, "Planning for Teaching."

The Morrison Plan.—The Morrison plan represents an adaptation and application of Herbart's psychology to the secondary school. The five formal steps of Herbart's plan correspond closely to Herbart's sequence of preparation, presentation, association, generalization, and practical application. The popularity accorded Morrison's proposal, as well as one of its main defects, can be attributed to its logical, rigid organization. To teachers seeking a specific formula for teaching a unit, the Morrison plan became a stereotype. The weakness in the use of such a highly standardized procedure lies in the probability that sufficient adaptations will not be made to provide adequately for the needs of the class being taught.

There is the ever-present danger that a teacher following a rigid plan will become unduly concerned with "working the plan." There is considerable evidence, however, that many teachers did adapt the Morrison plan to their own instructional purposes.

Indications of the influence of the stimulus-response psychology are revealed by a comparison of the three phases of the learning cycle of that psychology and the five steps of Morrison's plan, as follows:

Learning Cycle of Stimulus-Response Psychology	Steps in Morrison Cycle of Teaching
Stimulus	1. Exploration 2. Presentation
Reflection	3. Assimilation
Response	4. Organization 5. Recitation

The objectives and activities of students and teacher in each of the five steps of the plan as suggested by Morrison were as follows:

1. *Exploration.* In the brief exploratory stage the teacher ascertains what knowledge the students already possess in regard to material included in the unit and what misinformation and erroneous concepts they have about it. This may be done by means of either an objective or a subjective type of pretest, or the children's previous knowledge and understandings may be explored by oral discussion or testing. The purposes of this exploration are economy of time, establishment of an apperceptive sequence, and orientation.

Time is wasted by a useless repetition of materials with which the students are already familiar. Time is likely to be wasted as a result of the low level of interest in repeating the study of already-known materials. By means of the exploratory activities students may be led to see connections between the new unit and preceding ones. An analysis of the results of the pretest gives the teacher a basis for planning the subsequent development of the unit in terms of the knowledge of the students involved. The orientation in this period of the teacher rather than of the pupils appears to be Morrison's chief aim.

2. *Presentation.* In the second stage of the development of a unit, the teacher presents a brief overview of the unit in which he indicates the chief features of the unit, with particular reference to its purpose, general content, and significance. The two main purposes of the presentation are (1) to arouse the interest of the students in the unit, thus providing the basis for motivation, and (2) to give the students such explanation and preparation as will enable them to attack the task of study and assimilate the unit in an effective manner. The presentation is followed by a "presentation test" to ascertain the degree to which the students grasped the central idea of the unit as emphasized in the presentation. In the event the results of the presentation test reveal that some of the students failed to gain the essential understanding, a second presentation is advisable.

3. *Assimilation.* Upon the basis of a long-term assignment in mimeographed or typewritten form, usually given at the beginning of the period, the students engage in a long directed-study period under the direction of the teacher. For example, in a unit extending over a period of twenty days, approximately thirteen days would be devoted to this step. During this time the entire class may work on all aspects of the unit, or individual or small groups may work on some particular phase of it.

During their study, students utilize books, library reference materials, and audio-visual aids, and make field trips to obtain information pertaining to the unit. The study is carried on in the classroom, which is converted into a study room by the addition of tables and study materials, or the class may study in the school library or wherever a source of information can be found. The teacher checks on pupil progress by means of a series of "progress tests" and by means of individual and group conferences. Common difficulties encountered by the class are cleared up in class discussions held at irregular intervals.

4. *Organization.* Following the assimilation period, the students organize the information they have obtained into various forms for presentation to the group or to the teacher. The materials may be organized in the form of notes for an individual or small-group oral report, of notes for a debate or panel discussion, or of a written paper. This organization contributes to the further mastery of the materials, as well as serving as the basis for the activities of the recitation period. Morrison suggests the application of the "mastery formula" to measure the pupils' ability to organize the data they have collected.

5. *Recitation.* In this final period students present the results of their study to each other and the teacher. Morrison's insistence that every recitation be an audience-like situation is realized in that individual members of the group share their ideas of the unit with the entire group. Each pupil is responsible for contributing to the total knowledge and understanding of the group.

The Morrison Plan in School Practice.—As part of the National Survey of Secondary Education, a study was made to ascertain what procedures were used in unit teaching in high schools in all sections of the United States. The results revealed that, in general, many of the suggestions of Morrison for teaching a unit were being used. Instead of the five steps suggested by Morrison, the schools reported the activities under three general headings, namely, the introductory phase, the laboratory period, and the class discussion period. In order of frequency the activities mentioned were as follows:[10]

1. *Activities in introductory phase of unit teaching:*
    (a) Class discussion.
    (b) Purpose and general content made clear by the teacher.
    (c) Oral questioning.
    (d) Methods outlined by which pupil is to study.
    (e) Class meets and works as one group.
    (f) Relation of new unit to previously mastered ideas or facts is developed through questions, suggestions, or explanations by the teacher.
    (g) Unit is told to the class by the teacher as a story or sketched by the teacher in a talk or a lecture.
    (h) A written objective pretest is given.
    (i) Assignment unit and problems are furnished pupil in multigraphed, mimeographed, or printed form.
    (j) Assignment, units, and problems are written on the blackboard to be copied by the pupil.
    (k) Assignment, units, and problems are given orally by the teacher and copied by the pupil.
    (l) Hypotheses are advanced.
    (m) Pupils are given a written test to determine the extent to which they have secured an accurate overview.
    (n) Introductory steps are repeated for those who do not pass the test satisfactorily.
    (o) A written pretest (essay type) is given.

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[10] Roy O. Billett, "Directed Learning and the Unit Assignment," *Bulletin of the Department of Secondary School Principals*, No. 45, pp. 55-85.

2. *Methods used during the laboratory period of the unit plan:*
    - (a) Teacher directs informal discussions of common difficulties.
    - (b) Pupil works on supplementary topic of his own choosing with approval of teacher.
    - (c) Pupils work part of the time individually and part of the time in small groups.
    - (d) Teacher gives objective tests to discover pupil progress.
    - (e) Teacher calls for brief reports from individual pupils on common difficulties.
    - (f) Capable pupils at times instruct other pupils.
    - (g) Pupils formulate tentative solution of the problem unit.
    - (h) Teacher gives subjective or essay-type test to discover pupil progress.
3. *Methods used during the class discussion period:*
    - (a) Pupils give demonstrations or present displays of work done in connection with the unit.
    - (b) Small groups or committees offer their interpretation of the unit.
    - (c) Lectures are given by outside speakers.
    - (d) Motion pictures or slides related to the unit are shown.
    - (e) Excursions are taken to acquire and confirm knowledge related to the unit.

3. THE PROJECT METHOD

The term *project* was originally used in connection with the teaching of agriculture and home economics. Teachers of these courses, realizing the need for extending the scope of their subjects beyond the textbook and the meager laboratory equipment and materials, assigned supplementary exercises for students to do on their farms and in their homes. The work on these projects was carried on in a natural physical environment. The student saw the project as the challenge of a real task, which gave unity to the activity. Aside from the limited supervision which could be given by the teacher the student made his own work plans, marshaled his energies, and evaluated his own efforts in achieving his goal, namely the construction of a material product.

In an endeavor to implement Dewey's philosophy for use in the classroom, Kilpatrick suggested that the *essence* of a project was the purpose which dominated the learner. He conceived the possibility of developing a purposeful attitude in connection with an intellectual task in a social environment as readily as with a task carried on in a physical environment and resulting in a material product. Thus he proposed a broadening of the original concept of the project to mean "a whole-hearted, purposeful activity proceeding in a social environment."

The use of projects does not represent the only effective method of motivating students. However, the project method does satisfy numerous requirements of a good learning situation, particularly the freedom of students to suggest learning goals, to consider the relative merits of different goals, to choose one goal, to formulate their own plans to attain their chosen goal, and to pursue the plans to completion.

In an effort to make the project method a technique of teaching, rather than a philosophy which should permeate all teaching, one of the authors of this text in an earlier volume formulated the following statement of the meaning of *project:* "The project is a unit of activity carried on by the learner in a natural and lifelike manner and in a spirit of purpose to accomplish a definite, attractive, and seemingly attainable goal." [11]

Characteristics of a Project.—An analysis of the literature on the project reveals that this kind of activity possesses the following characteristics:

1. The project is a learning unit. Its unity depends upon pupil purpose rather than upon the logical arrangement of subject matter.
2. The project is a self-imposed or willingly accepted task growing out of an awareness on the part of the pupil of its significance. Along with the acceptance of the challenge of the task goes the acceptance of responsibility for "following through" until its completion.
3. The project grows out of the pupil's experiential background thus enabling him to discover clues for planning and organizing his own activities.
4. The project retains its identity only as long as the pupil has freedom to pursue his purpose unrestrained by the barriers of subject-matter boundaries or teacher domination.
5. The project invokes a whole-hearted effort on the part of the pupil to achieve an attainable and desirable goal.
6. The project leads to goals which are recognizable by the pupil, thereby enabling him to evaluate his own progress in achieving his objectives.

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[11] Harl R. Douglass, *Modern Methods in High School Teaching,* p. 325.

Plans for Project Teaching.—Various plans for teaching have been proposed. Several of the suggestions have been based upon Kilpatrick's[12] four phases of purposeful learning, namely, purposing, planning, executing, and judging. The following composite plan incorporates a few of the essential elements of some of these plans.

1. *Selecting the Project.* The initial phase of teaching a project has often been referred to as *purposing*, which is a misnomer in that pupil purposing characterizes every step in the project method. In the selection of a project, the pupils, under the guidance of the teacher, make choices of the goals they are to pursue. In the case of group projects, a list of suitable projects is suggested by the pupils or the teacher. The pupils consider the relative merits of the suggested projects and select one from the list for study. While the educative value of the project method is dependent upon the manner in which pupils are guided in assuming intelligent responsibility for directing their own learning activities, it is likewise essential that the projects themselves have educational significance. In the selection of projects the following criteria should be applied to each project which is proposed for individual or group study:

1. What are the possibilities that as a result of the study of a project the pupils will acquire understandings, skills, ideals, and attitudes which make the optimum contribution to the pupil's developmental needs?
2. In terms of the time and facilities available, how does the project compare with alternative learning activities in probable educational values?
3. Are the learning activities involved in the study of the project appropriate to the maturity of the pupils?
4. Are the probable outcomes of the project in keeping with the objectives of the course?
5. Are the learning experiences involved in the project of sufficient scope and variety to contribute to the individual needs of pupils as well as to the needed common learnings of all types in the complete development of the pupil? For those teachers who are primarily concerned with the pupil's mastery of a "well-rounded" body of subject matter, it is possible, on the basis of diagnostic tests, to ascertain the gaps in a pupil's grasp of a subject and guide him into a study of other projects which will fill in the gaps. For example, in a biology course the teacher can construct and administer a diagnostic test covering the basic concepts and

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[12] William Heard Kilpatrick, *Foundations of Methods*, p. 203.

principles in biology. In the event that an analysis of the test results reveals that a pupil's knowledge is deficient in certain areas of the subject, he can be guided in the selection of future projects which will bring him into contact with these areas.

6. Does the project represent a meaningful aspect of the pupil's total environment, thus enabling him to see its social significance?
7. Is the learning involved in the project of such a nature as to lead on to further important learnings?

2. *Planning the Project.* In the second phase of teaching a project, the pupils are given freedom and opportunity to formulate plans for attaining the goals they have established in the initial phase. Upon the basis of a careful preliminary study of the project, the class considers the merits and practicality of various ways and means of studying the different problems involved in the project. From a list of proposals submitted by individuals or committees of pupils for studying the project the class selects those which seem most appropriate. For example, in the planning period of a project in biology, the class should study the desirability of the use of available sources of information such as (1) the most suitable reading materials, (2) desirable laboratory work, (3) appropriate field trips, (4) visual aids pertinent to the project, and (5) other sources.

Following study of the possibilities of various means the pupils select one or a combination of them. Throughout the process of planning, the teacher should take a positive, constructive part in stimulating and guiding pupil initiative. Since self-imposed rather than superimposed tasks are being sought, the teacher's suggestions along with those of the other members of the group should be considered, evaluated, modified, and adopted or rejected. The teacher's ideas should stand or fall on their merits, not because they are the voice of authority. In a truly democratic situation, the teacher's views will carry considerable weight because of the soundness which naturally grows out of maturity of thought and judgment. Genuine constructive, cooperative learning activities can proceed on no other basis than the one described.

3. *Executing the Project.* In the third phase of project teaching, the teacher guides the pupils in carrying out the plans which they formulated during the planning period. These plans are executed in a socialized situation in which pupils are free to accept the compulsion of their own self-imposed tasks. The teacher's chief function is to provide favorable conditions for the students to pursue their plans. This may be done by assisting pupils in interpreting their experiences in terms of the ultimate goals to be attained, by

giving encouragement in the face of difficulties, and by making study materials available for the use of the class. As the work on the project proceeds, a variety of activities may be introduced. The entire class may work on certain aspects of the project. Class committees may study some of the problems in considerable detail. Individual pupils are permitted and encouraged to explore their special interests related to the project. In this period, the results of the work are organized for final presentation and evaluation by the group.

4. *Judging the Project.* The final phase of teaching a project is sometimes referred to as the period of judging. While the final evaluation is made by the students in this period, evaluation is continuous throughout the work on a project. In case individual pupils engage in different projects, each pupil presents the results of his work on a project to the class in the form of a demonstration, oral report, written summary, etc. In a group project the audience-like situation of the culminating stage is preserved by having different individuals and small groups present their findings to the entire group. In all the presentations an effort is made to relate the results to the objectives set up in the early stages of the project. Pupils evaluate their plans and procedures in the light of their experiences in the project. They consider what modifications might have been desirable, whether or not their source materials were adequate and the value of the outcomes in relation to the time and effort involved.

An Appraisal of the Project Method of Teaching.—There is little objective evidence which reveals the superiority of the project over other methods of teaching. The use of projects does not automatically insure that optimum learning will be achieved. It appears clear, however, that the philosophy and psychology underlying the project method are related more closely to the conditions essential for effective learning than are those of many other widely used methods of teaching. Properly used, the project method possesses the following values:

1. The relationship between the pupil and the teacher is conducive to effective learning, in that provision is made for guided self-activity on the part of the learner.
2. The attitude of the pupil is more favorable for learning as the result of the pupil's responsible participation in establishing and planning the goals of the learning activity.
3. The participation of pupils in learning activities which they have accepted as vital and significant to themselves tends to reduce the causes of pupil misbehavior.

4. In the group project the child becomes a helpful co-worker in a common, significant, social task.
5. The use of the individual project is one of the most effective means of providing for individual differences. The group project also provides learning activities of many kinds suited to different capacities and interests.
6. The similarity of the technique of problem-solving utilized in the project method to that involved in dealing with problem situations in life facilitates the application of school learning to life situations.
7. The possibilities of achieving desirable concomitant learning are enhanced by the project method. Among the attitudes which may be developed are open-mindedness and tolerance. More ample provision is also made for the acquisition of certain skills, such as study and work habits, techniques of cooperative effort, etc.

Limitations of the Project Method.—Many of the objections to the project method which are usually cited are not inherent weaknesses but are the result of faulty techniques, either in the organization of the learning materials or in guiding pupils in the use of those materials. The principal objections to the use of the project method may be summarized as follows:

1. It disrupts the logical organization of subject matter and thus leads to the omission of many things a child ought to know. This objection fails to recognize that the unity which results from an impelling purpose is greater than that inherent within a given body of subject matter.
2. It results in a waste of time, because the pupils devote a considerable amount of time to non-educational activities. In evaluating this limitation there is danger of failing to recognize the educational values of activities which may not contribute to the mastery of the subject matter but which contribute to other types of growth. Mastery of subject matter is only one of several important outcomes.
3. Opportunities for drill are limited. This is frequently mentioned as a limitation despite the fact that psychologists have demonstrated that the amount of drill can be reduced when children can attach meanings to learning materials. It is reasonable to believe that if initial learning were less superficial, less drill to "permanently fix" knowledge in the mind of the learner would be necessary.
4. It is difficult to find real projects in a school situation. This will remain a valid criticism as long as the school is so remote from

actual life. Problem situations occur in real life more often than in discussions in textbooks.

5. It requires superior teachers. Perhaps the best method of developing good teachers is for them to accept the challenge and stimulation which come from efforts to arrange vital learning situations. It is doubtful that any teacher becomes a great teacher by having pupils slavishly follow the pages of a textbook.

Projects in Various High School Subjects.—In the solution of problems in life situations an individual utilizes knowledges and skills from various areas of learning. It is likewise necessary for a project to cut across subject-matter boundary lines if it is to meet the test of *reality*. Departmentalization in the high school has tended to perpetuate the organization of units within a subject, rather than the organization of instructional materials around units of learning. Superficial efforts have been made to correlate the work on a unit by arranging for different aspects of a unit to be taught simultaneously by teachers of different subjects. Teachers of units in a core curriculum enjoy greater freedom in utilizing learning materials, irrespective of subject, which are relevant to the unit.

For high schools which have curricula divided into separate subjects, the following list illustrates the type of projects which are employed in the various high school subjects:

Projects in English:

1. Writing a ballad to be sung by the class
2. Writing and staging a play by the class
3. Writing letters to local newspapers presenting viewpoints on current issues
4. Writing a motion picture scenario of a book of fiction studied in class
5. Carrying on correspondence with high school students in other states
6. Compiling a modern poetry notebook with critical comments and illustrations

Projects in science:

1. Studying and making a guide to the geology of the local community
2. Demonstrating the flash-point of gasoline
3. Analyzing cosmetics
4. Constructing a model bridge to illustrate the principles of bridge construction
5. Studying ways in which the local community attempts to protect the health of its citizens

Projects in the social studies:

1. Writing a history of the local community
2. Making a study of local housing conditions
3. Making a survey of the provisions for traffic safety in the local community
4. Writing and presenting a pageant on the Westward Movement in America
5. Making a mural portraying the history of transportation
6. Making a study of a regional development project such as the T. V. A., Grand Coulee, etc.

Projects in journalism:

1. Studying how newspaper propaganda has influenced history
2. Conducting a crusade in the school newspaper to promote some desirable school practice
3. Studying a typical day in a newspaper composing room
4. Preparing an exhibit of newspapers to illustrate some one feature of a newspaper
5. Conducting a "post mortem" or critical survey of the school newspaper after publication

Projects in home economics:

1. Furnishing the home economics classroom as an apartment
2. Analyzing foods to ascertain whether or not they meet the standards of the United States Food, Drug and Cosmetic Act
3. Planning a girl's wardrobe
4. Caring for a small brother or sister after school for a period of one month
5. Caring by the class for young children whose mothers are employed
6. Doing the marketing and food buying for the family on a budget for two weeks

Projects in Latin:

1. Underlining the words derived from Latin in a selection from modern English, e.g., the preamble to the Constitution
2. Translating American songs into Latin and singing them
3. Planning a trip over a route which Caesar followed in his Gallic Wars
4. Studying the differences between Roman and modern athletics
5. Comparing English and Latin with reference to their means of expressing time, indicating case, expressing obligations, etc.

Projects in modern foreign languages:

1. Corresponding with students in French- or Spanish-speaking countries

2. Writing a cooperative story about the people, customs, food, and institutions of a foreign country
3. Reading Spanish newspapers and giving oral reports on their contents
4. Planning and conducting a Spanish fiesta, using Spanish songs, dances, games, etc.
5. Studying foreign influences upon various aspects of American life, such as amusements, customs, geographical names, etc.

Projects in art:

1. Making posters for school events
2. Designing and painting a mural for the school library or classroom
3. Designing and making costumes for a period play from a study of their characteristics
4. Designing and making book ends, book covers, Christmas cards, billfolds, etc.
5. Understanding and appreciating modern art

Projects in music:

1. Composing a song or instrumental solo
2. Presenting an operetta or oratorio
3. Making a scrapbook on such topics as a particular phase of music, a famous musician, the historical development of music or musical instruments
4. Playing a new musical instrument
5. Appreciating good music

Projects in commercial subjects:

1. Planning and operating a model business office in the classroom with students acting as executives, bookkeepers, filing clerks, typists, etc.
2. Planning and presenting plays showing the problems of modern business
3. Making an audit of the books of the school cafeteria, small local business, etc.
4. Keeping a confidential record of personal income and expenditures
5. Making a survey of business enterprises in the local community
6. Making a study of the sugar beet industry of Colorado, the coal-mining industry of Kentucky, or the cotton industry of Texas

Projects in mathematics:

1. Studying the architecture of a church in relation to geometric design

2. Studying the evolution of numerals.
3. Making a list of the practical applications of mathematics in the student's daily life
4. Studying the costs of public education in relation to its values
5. Keeping an individual budget

4. TEACHING A UNIT: PREPARATORY ACTIVITIES

The distinction between the *project method* and the *unit method* has largely disappeared in the modern high school. The trend is toward purposeful pupil activities in which subject matter is unified around problem-solving situations. Thus one of the main difficulties inherent in the Morrison plan is resolved, namely the organization of the elements of a unit on an artificial basis which results from the failure to "fit them together" into significant learning patterns. Many units of subject matter organized in advance are subject to this limitation. The evolving learning experiences of the pupil provide the only satisfactory center of unity.

In the early stages of development of the project method, the idea was accepted that *all projects are units of pupil activity.* Not until recently, however, was there recognition of the fact that *all significant units involve purposeful pupil activity.* In the subsequent pages of this chapter the authors have outlined a plan of unit teaching which incorporates some of the best features of the traditional unit method and the project method.

The activities of the teacher and the pupils in the teaching and study of a unit are divided into four phases: the preparatory, the initiatory, the developmental, and the culminating.

Selecting the Units.—The effectiveness of the unit method of teaching is determined in no small part by the selection of appropriate learning units. The suitability of a unit is dependent upon various factors which operate in a given learning situation. The most significant factors are the characteristics of pupils, particularly their abilities, educational statuses, interests, and social maturities. Other considerations in selecting a unit are: (1) its contribution to the outcomes of the course (these outcomes should be expressed in terms of basic understandings, attitudes, appreciations, and skills), (2) its significance to the student's understanding of an organized field of knowledge, (3) its appeal to the interests of the class, and (4) the possibilities of developing desirable concomitant learnings.

The individual teacher's responsibility for choosing units varies from one school system to another. He may be expected to make his selection from a list in the official course of study, or at least to adapt the units chosen to the course of study. In a few schools, teachers cooperate in the preparation of resource units, which have been discussed in Chapter 7. Ordinarily the individual teacher is not required to teach any unit unless he believes that it serves the needs of his students, and in some schools he assumes full responsibility for the selection of units which he will teach. Units of the strict subject-matter type probably should be selected by the teacher alone. In an increasing number of high schools, however, the choice of the unit represents the combined judgment of the teacher and his students. This plan brings unit teaching into line with the "pupil purposing" which is the foundation and principal value of the project method.

In the process of selection, a careful analysis should be made to ascertain whether or not a unit possesses good teaching qualities. The teachers of a junior high school recently formulated the following list of desirable characteristics:

1. The teaching unit should have a useful purpose.
2. It should reproduce actual life situations as nearly as possible.
3. It should utilize materials as they occur in life.
4. It should involve a variety of direct sense experiences.
5. It should provide a considerable amount of pupil activity.
6. It should provide for some free, informal association of the pupils.
7. It should provide a good opportunity for the pupil to originate, plan, and direct an activity.
8. It should make an opportunity for manipulative or physical activity.
9. It should provide opportunities to judge, choose, and evaluate.
10. It should contain accurate information.
11. It should be possible to complete within the time available for the unit.
12. The exposition should be clear enough for a new teacher to reproduce the experience.
13. It should state exactly where materials may be obtained.
14. When references are given, they should be complete and exact.

If the teacher is free to make selections of units for his class, he should prepare a list of tentative units, from which one unit should be selected by the members of the class under teacher guidance. Each of the units should possess the characteristics of a good teaching unit and should be based upon the teacher's knowledge of the needs of the class.

Anticipating Outcomes.—The teacher should formulate a list of the outcomes which may be achieved by the study of each of the units. Taking for example a unit on "The American Labor Movement," a few of the desired outcomes might include:

Basic Understandings

1. The present labor movement is an outgrowth of living and working conditions which developed from the changing conditions in an industrial society.
2. New inventions and the Industrial Revolution created a need for workers to organize to protect their rights.
3. Violence and radicalism as evidenced by unions have usually occurred on the outer fringe of the movement or through certain radical leaders.
4. Unionism has become a group force that influences every feature and standard of our economic, industrial, political, and social life.

Attitudes

1. Cooperation of management and labor is the best method known for settling labor disputes.
2. Democratic ideals recognize the infinite worth of an individual as a human being, regardless of his occupation.
3. The United States as a leading nation of the world has a responsibility for helping to promote conditions of human welfare.
4. A careful study of the facts is necessary to the proper understanding and solution of a problem.

Appreciations

1. The united efforts of labor groups have resulted in the promotion of human welfare.
2. The dignity of human labor should be recognized in a democracy.
3. The laboring class is a large and important class of our population, and its welfare must be considered.
4. Bias and prejudice must be overcome before correct judgments can be formed.

Interests

1. An awakened interest in labor problems and their effect upon society, leading to wider and more intelligent reading on the subject.
2. An interest in labor legislation.
3. An interest in local conditions of labor.
4. A deeper concern for human welfare.

Habits and Skills

1. Skill in the use of library materials.
2. Technique of making, on a limited scale, careful observations of conditions of work.
3. The ability to distinguish between truth and propaganda.
4. Skill in discovering and analyzing facts as the basis of judgment.

Pretesting.—Detailed information in regard to the opinions and the knowledge already possessed may be obtained by a preliminary test or survey. Typical of the items which might be included in the test are:

PRETEST OF BASIC UNDERSTANDINGS

Place a *T* before each true statement and an *F* before each false statement.

____1. Labor plays a greater part in politics in the United States than in England.

____2. The "sit-down" strike has been declared illegal by the United States Supreme Court.

____3. The Congress of Industrial Organizations (C.I.O) is organized on the industrial union basis.

____4. The press is very careful to present all the facts in regard to labor-management disputes.

PRETEST OF ATTITUDES

____1. The welfare of people who work with their hands is closely related to our social life.

____2. If there were no highly paid, brilliant executives and managers of industry, there would be no work for anyone to do.

____3. There is no use in attempting to free the world from want.

____4. It is well to allow children to work in factories because it will keep them out of mischief.

5. TEACHING A UNIT: INITIATORY ACTIVITIES

Purposes.—The tone and quality of the work on a unit are established in the introductory phase. The first impression the student receives of the unit largely determines his attitude toward all his subsequent work on it.

In the early part of the initiatory period, the teacher should give a brief overview of each unit. The results of the pretest furnish a clue to desirable approaches, including the overview of the unit.

In instituting a unit, the teacher should seek to achieve the following purposes: (1) to create pupil interest in the unit, (2) to reveal the significance of the unit to the pupils, (3) to indicate the relationships between the unit and those previously studied, (4) to reveal the main feature of the unit, and (5) to formulate or assist pupils in formulating the objectives of the unit.

Creating Interest in the Unit.—This outcome may be achieved in various ways. The effectiveness of one procedure or a combination of procedures is dependent upon the present interests, knowledge, and maturity of the pupils. Likewise important in creating interest in a unit are the ability and enthusiasm of the teacher.

Pupil interest in a unit may grow out of newspaper and radio accounts of important events, e.g., newspaper accounts of floods in the Mississippi Valley may be the point of departure for study of a unit on conservation and flood control. News items on government price control may serve to arouse interest in a unit on food, its production, distribution, and consumption. Baseball averages, changes in stock market quotations, or graphs of price indices may serve to arouse interest in various units in mathematics. Motion picture films, class discussions, brief, well-planned lectures, and stories from history and literature represent interesting approaches to various units. A simple demonstration of a scientific principle can be an effective approach to a unit in science.

Revealing the Significance of the Unit.—An understanding of the significance of a problem on the part of the learner is essential in the learning process. One of the most effective ways of revealing the importance of a unit to the student is to indicate its relationship to his daily living. The pupil's identification of the unit with his daily life contributes to motivation as well as assisting him in making the best practical use of the knowledge and skills he acquires in school.

In the introductory period of teaching a unit, many illustrations can be given which reveal the importance of the unit in life situations. These illustrations should be in terms of specific activities. In a unit on business letters in an English language course, newspaper items and pictures revealing the universal use of business letters can be presented, e.g., advertisements showing a business man dictating a letter, a housewife receiving a letter from an insurance company, or a young man writing an application for a position. The use of mathematics in daily living can be illustrated with materials from the financial section of the daily newspaper.

The activities used to initiate a unit will differ somewhat according to the type of the local community. For example, the approaches to a unit on the American labor movement may include one or more of the following:

1. A study of current events dealing with the problems of labor or of the local labor situation.
2. A class survey of the types of occupations in which various members of the families of pupils are taking part. This may indicate that a large number of occupations are represented in the class. A discussion of the dignity of all types of socially useful work may lead to an understanding of the contribution of various kinds of work, including that of the labor group.
3. A field trip to some local industry. This may serve as the "takeoff" leading to a study of the conditions of labor.
4. Preparation of a bulletin board display of newspaper stories that deal with various phases of the labor problem such as strikes, labor legislation, and settlement of labor disputes. This may develop a number of questions for further study.
5. Showing a short film dealing with the problem of management and labor such as "Behind the Scenes in the Machine Age."

Giving the Overview of the Unit.—The main features and the general pattern of the unit should be given in the overview. This overall view gives the student perspective and enables him to see the relationships which exist among the various aspects of the unit. The teacher's presentation of the unit in brief summary form and of the long-term assignment are designed to give the student an understanding of the general plan of the unit and to reveal the relationship of the unit to other units.

In undertaking the study of a new unit, students should be able to see the contribution which the unit can make to the general objectives of the course. In order to utilize the learnings they have acquired in the study of previous units, students should also perceive the interrelationships of the units included in the course. The student's understanding of these relationships is facilitated by a brief review of previous units in which the main features of these units are related to the new unit.

Possible Outcomes of the Unit Should Be Indicated.—The nature, scope, and direction of the activities of a unit are determined by the anticipated outcomes. In the early phases of a unit, students should be able to see clearly the probable results of their work. The members of a class should formulate a series of immediate objectives in terms of the ultimate goal which they have accepted for themselves under the guidance of the teacher as worthy of their best efforts.

The class should formulate a list of questions in regard to the unit. The questions might include the following:

1. Why are we interested in the problem?
2. What learning materials are relevant to our study of the unit?
3. Where shall we get the materials?
4. How shall the work be organized?
5. In what form shall we present the results of our learning?

The Unit Assignment.—On the basis of results of the pretests the teacher should prepare a comprehensive unit assignment for presentation to the students at the beginning of the initiatory phase of the unit. The assignment should be subject to modification as work on the unit proceeds. One of the problems many teachers encounter in unit teaching is that of maintaining sufficient flexibility in the plan and at the same time directing the activities of the students toward definite learning activities. In this connection the teacher should be aware that pupil development along desirable lines rather than mastery of subject matter is the most important outcome of all instruction.

The unit assignment should be in the form of a mimeographed *study guide,* containing (1) introductory remarks in regard to the significance of the problem, outline of main points, objectives, etc., (2) a list of directions in regard to the steps to be taken, sources of materials, etc., and (3) questions relating to certain facts and principles as a guide to pupil activities.

In the use of the unit assignment, the remoteness of the goals in comparison with the series of immediate goals provided by the daily recitation may not be sufficiently impelling to pupils to insure maximum effort unless the teacher sets up a number of immediate objectives.

Most projects contain several specific problems. These should be listed in the assignment, and provision should be made for the pupils to appraise their success in the solution of each of the problems. There is also need for continuous evaluation of pupil comprehension and progress by the teacher. These evaluations can be made upon the basis of test results, observations of the pupils' work, and individual and group conferences with the pupils.

The question frequently arises as to how to measure the general achievement of a pupil in a course when he has devoted his study to a few specific projects. Many teachers construct a test covering what they consider the basic material in the course. The test is administered to all pupils for diagnostic purposes. If the results of the test indicate that a pupil is deficient in an important area of the course, he is guided into a selection of future projects which will bring him into contact with materials in the areas where he is deficient. In the authors' opinion, only teachers who are unduly concerned about subject-matter mastery give much consideration to this problem. Teachers who think of outcomes of instruction in terms of pupil growth consider it a minor issue.

6. Teaching a Unit: Developmental Activities

Planning.—Although the formulation of the problem and the planning of pupil activities should involve pupil-teacher cooperation, it is necessary for the teacher to make a thorough preliminary plan for the conduct of activities in order that he may be able to guide the pupils in their study of the problem. The plan should include a formulation of the chief problems, a brief summary of the facts and principles involved, and suggested pupil activities, together with sources of information. The plan should, of course, be subject to change as the study progresses and new pupil interests become evident.

Activities of Pupil and Teacher.—The activities of the pupils should be varied in order to provide for individual differences. The teacher should assist pupils in acquiring the basic techniques of collecting information such as using bibliographical aids in locating information, determining the accuracy of the data discovered, taking notes, and interpreting and organizing bodies of information after they have been accumulated. The activities of pupils in the study of the American labor movement might include:

1. Preparation of a glossary of terms in order that students may be able to understand the unit material. The glossary should define such terms as:

    arbitration
    boycott
    closed shop
    collective bargaining
    craft union
    lockout
    mediation
    open shop
    sit-down strike
    strike
    sympathetic strike
    yellow-dog contract

2. Individual preparation of oral reports on the use of slaves in Greece and Rome

3. Preparation by a committee of the class of a report on the purpose and formation of craft guilds, indicating how the skills of the craft were passed on to the next generation
4. Individual report on life in a feudal manor, describing division of labor
5. Class committee preparation of a summary to show the gains made by the working man from ancient times and the Middle Ages to the present time
6. Study by class of various labor organizations with particular reference to:
   - (a) Type of organization
   - (b) Purpose of organization
   - (c) Date of organization
   - (d) Leader or leaders
   - (e) Methods used to obtain its objectives
   - (f) Contribution of union toward labor welfare and social progress
7. Class study of early history of the Industrial Revolution and its effects upon the worker, labor conditions, and employment of women and children
8. Study of the film "Within the Gates" to obtain information in regard to the development of the factory system and expanded production in the textile industry, followed by discussion and a summary of development of the industry and its effects upon workers
9. Class study of the condition of laborers in the depressions of 1873, 1893, and 1932 and the effects of these depressions on the efforts of labor to organize
10. Special reports on some of the labor-management disputes which led to violence such as: the railroad strike of 1877, the Haymarket riot in Chicago, the Homestead strike, and recent strikes
11. Consultation of newspaper files to ascertain the differences in the reports of strikes by anti-labor and pro-labor publications
12. Study of the political activities of labor organizations
13. Study of the reasons for inter-jurisdictional labor disputes
14. Study of the conditions of labor under Nazism
15. Panel discussion or debate on the question, "Would it be better if all organized workers were united under one organization?"
16. Preparation of a paper on the rights of the public in labor-management disputes
17. Pupil reading of "The Song of the Shirt" by Thomas Hood and "The Man With the Hoe" by Edwin Markham, followed by discussions of the relation of these poems to the problems of labor

18. Preparation of a paper on the subject, "How Can a Solution to the Labor-Management Problem Be Found?" or "How May Labor Organizations and Employers Develop a Sense of Responsibility Corresponding to Their Powers?"

7. TEACHING A UNIT: CULMINATING ACTIVITIES

The final phase of unit teaching is devoted to reports on and a final appraisal of the outcomes. Pupils are given an opportunity to draw conclusions and apply them. Generalizations should be formulated which have been arrived at through the study of the units by the pupils. For example, in the study of a unit on the American labor movement, one of the generalizations might be: "Means of settling labor-management disputes peaceably are necessary in order to protect the welfare of the public."

Oral presentations by individual pupils, accompanied by illustrative materials and demonstrations, present an opportunity to ascertain the pupil's ability to assemble and present materials bearing on the solution of a problem. If the class is too large to permit individual presentations, different pupils may present different aspects of the unit. Another possibility is pupil preparation of reports in the form of letters, magazine articles, or newspaper items.

Other forms of culminating activities are:

1. An exhibit of picture, poster, graph, and pamphlet materials collected for the unit
2. A "quiz" program as a means of reviewing basic understandings
3. Presentation by each pupil of a paper revealing his reactions and opinions developed from study of the unit
4. Committee preparation of an assembly program for presentation by the class to the entire school in the form of a short play, a panel discussion, or a radio program
5. Review of films used during the developmental period in order to clinch important understandings
6. Class presentation of a summary of the unit
7. A final test of basic understandings, attitudes, and interests similar to the test given in the preparatory period
8. Observation and recording of changes in pupil behavior and improvements in skills and habits in the form of anecdotes set down by the teacher
9. Pupil evaluations of their own progress in methods of study, initiative, attitudes, profitable use of time, and the like, prepared in the form of check lists

10. Cooperative appraisal of pupils' diaries and reading records covering the unit period
11. A final test of basic knowledge and skills

QUESTIONS, PROBLEMS, AND EXERCISES

1. Distinguish between the unit plan and the unit method.
2. How may units in different high school subjects be correlated?
3. What contribution does testing make to the unit method?
4. State the different viewpoints as to the meaning of the term *project.*
5. List four educational movements which have probably contributed to the evolution of the project method.
6. In what respects does pupil activity in the project method differ from that in other methods of teaching?
7. List and evaluate the chief objections to the unit method.
8. What is the relation between problems and projects?
9. Outline a project and suggest means of initiating it for study in a class in your major teaching subject.
10. What factors might contribute to the failure of a group to complete a certain unit of work by a given date?
11. What are the basic differences between experience and subject-matter units?
12. Ask your librarian for a reference book explaining the Dalton plan and other "contract" plans of study. In what respects do these plans represent a type of unit plan?

Chapter 12

LECTURING, TELLING, AND EXPLAINING

1. THE PLACE OF LECTURING OR TELLING IN HIGH SCHOOL TEACHING

By common consensus there is no place in the high school for "lecture" courses. There are some who would go so far as to say that there is no place in high school for lectures. The latter, however, is an unfortunate overstatement. As a matter of fact, it is reasonable to assume that there should be more and better lecturing and telling in the high school. It is most probably true that there is too much lecturing in the college and university and too little in the lower schools and that there is a need for better lecturing all along the line. It is also true that the younger the audience, the shorter, the clearer, and the more interesting must the lecture be.

Need for Oral Presentation by the Teacher.—Frequently during the progress of a course there is a definite need for the teacher to give oral explanations or interpretations to a class. A number of examples of appropriate occasions are noted in the following paragraphs.

When a new topic or unit is introduced the teacher should:

1. Reveal how the topic is related to the previous work in the course
2. Give a preview of the new unit or topic
3. Disclose possible approaches and methods of studying the new topic
4. Provide a clear understanding of the significance of the topic
5. Indicate the basis of evaluation of pupil achievement

As the work on the topic proceeds, *the students may ask questions* which are sufficiently significant to deserve discussion and clarification by the teacher. If a common difficulty is encountered by the class, it is well for the teacher to assist them in overcoming it by a concise explanation. Quite often a student's question provides an opportunity for the teacher to emphasize an important point, thereby developing new insights and understandings. If skillfully done, the teacher's elaboration and supplementation of study materials create greater pupil interest and favorable attitudes for study. While the teacher's explanations should be pertinent to the topic, he should not be too much concerned about apparent digressions from the logical organization of the topic.

As the study proceeds, it may take a direction which requires the *use of additional supplementary materials.* The teacher may find it feasible to summarize and present this material to the class, especially when the material:

1. Is not available to the students in the library
2. Is recent and not well organized for pupil study
3. Presents points of view which require clarification
4. Requires considerable condensation

In the event *new forms of learning materials* such as films, slides and graphs are introduced, explanations in regard to their proper use should be given by the teacher.

When pupils give *incorrect or incomplete answers to questions,* the teacher may well elaborate briefly on the subject of the question.

Statements in the textbook which the author has failed to make clear should be explained by the teacher.

The teacher may also profitably give summaries:

1. At the beginning of the class period as a review of the previous day's work
2. At the completion of a topic during the class period
3. At the close of a class period
4. As one of the culminating activities of a unit

Opportunities for Telling.—While much can be said in favor of more oral telling by the teacher, the inference should not be made that the lecture method as employed in colleges and universities is recommended for the high school. The immaturity of high school pupils is such that they cannot be expected to give sustained attention to a forty-five-minute lecture unless the material has great intrinsic interest. It is true, too, that high school pupils do not possess the ability to condense material and analyze it into serviceable notes for future reference. Yet there will be occasions when "lectures" for an entire forty-five-minute period may be desirable, and perhaps many more when half of a forty-five-minute period may be advantageously employed in this way. There are also daily opportunities for short "tellings" of a few minutes in length. If the material is well prepared and delivered, these may add very materially to the effectiveness of the instruction.

Relation of Telling to Outcomes of Learning.—As a means of imparting information, lecturing or telling is more effective than having pupils read the same information in books, since meaning may be better expressed by means of emphasis, expression, and inflection of the voice, than in print and attention is more easily maintained. Also, opportunity is available for questioning by pupils and for the clearing up of misunderstandings by the teacher. Telling has another advantage in that it permits the use of more visual and concrete devices for explanation and emphasis.

In the development of skills and habits, telling has its principal functions in arousing interest, explaining the details of the skill or habit, and calling attention to incomplete or inaccurate responses. In explaining many processes, telling is very frequently more effective than written directions, especially if the telling includes demonstration. Most of us can recall experiences which will serve as good examples of this truth.

As a means of developing attitudes and ideals, lecturing or telling is very effective. In the education of the emotions, the personal approach is far more effective than the impersonal approach through the printed page. Very frequently a very effective speech will, when it appears in print, seem quite lacking in appeal. It is amazing what a skillful teacher can do with telling in developing appreciation of a picture, of literature, of music, of an idea, of an individual, or of a group of people. Explanation by tourist guides in art galleries or in business or industrial plants adds greatly to the hearer's interest and appreciation.

Advantages of Telling.—The most significant advantages of telling may be summarized as follows. Telling:

1. Supplements the materials of the textbook
2. Vitalizes ideas which too often appear cold and impersonal when printed in the pages of a book
3. Provides better opportunity for clarification of and emphasis upon important meanings
4. Can be adapted to the abilities, interests, previous knowledge, and needs of the pupils
5. Can be organized in accordance with the principles of educational psychology rather than the logical organization of textbook materials
6. Results in economy of time in that pupils are not required to search for relevant materials
7. Permits the judicious selection and use of materials pertinent to the study topic

8. Can be synchronized with questions by pupils in regard to matters of interest or difficulty to them, thus giving pupils the opportunity to raise questions at the time when the answer appears significant to them rather than postponing questions which may arise in the course of reading until interest has waned
9. Serves as a pattern of good oral English expression which may tend to counteract the influences of careless, incorrect speech to which pupils are subjected in many other situations.

The Limitations of Telling.—Many objections to telling have been mentioned by students of teaching methods. Some of them are limitations or weaknesses which are inherent in the use of telling or lecturing. Others are dangers to be avoided. Among the more important objections the following should be mentioned:

It is difficult to get and keep the attention of students. It should be observed that it is also difficult—usually more difficult—for the learner to keep his attention at a high level while reading assignments. The degree of attention learners give to lectures depends upon such factors as (1) the intrinsically interesting character of the materials, (2) the way the materials are organized for presentation, (3) the skill and personality of the teacher as a lecturer, (4) the use of illustration, and (5) the nature of the pupils' preparation and the nature of the expected follow-up.

The learner is not active but passive. To some extent this is another way of saying that the learner has a low level of attention. In addition, however, it carries the implication that the learner is not getting experience in application, in initiative, in organizing learning material, in finding things for himself, or in problem-solving.

There is not time enough for much lecturing or much explaining. It is true that not everything in a course of study can be discussed, explained, or elaborated by the teacher. This is to some extent an admission that there is too much in the typical course of study—too much to be learned by any method. The teacher must choose wisely what should be "lectured" or told.

The lecture wastes time. Waste of time can result from telling. It is unwise to use the lecture method for material which can be read quickly and understood as well, except for summary. Perhaps the great majority of material belongs in that classification. Waste also occurs when the teacher digresses or becomes too involved in details, employing more time than necessary. Certainly the "dictation" type of lecture is likely to be neither effective nor economical of time.

The lecture is likely not to be understood by young learners. Some writers believe that high school students are too immature for lectures, because they have a short attention span and also are unable to analyze a lecture and summarize its principal points. The validity of these objections depends upon the quality of the lecture and the skill of the lecturer. It must be conceded that most textbook writers express themselves in their writings better than most teachers in high school do orally, but this is not a necessary limitation on the lecture method. It suggests much study and practice in lecturing and careful preparation. High school pupils need training in analyzing lectures, in note-taking, and in organizing lecture materials. This should be an integral point of the lecture technique.

High school teachers are not good lecturers. It is unquestionably true that high school teachers, especially beginning teachers, are not good lecturers. Development of skill and effectiveness in explaining, telling, and lecturing requires time and much practice. Oral instruction is not as easily mastered as "lesson-hearing," and its weaknesses are much more obvious. The teacher who never acquires much skill in explaining and in oral presentation in general —and there are many who never do—can hardly become a truly superior teacher.

Probably the greatest limitations of high school teachers as lecturers are (1) failure to take time to prepare lectures carefully and use of the relatively inferior impromptu approach; (2) lack of skill, which can be gained only by continued careful practice with a determination to improve; and most important (3) the lack of background of teachers in their subjects, in life experience, and in ability to correlate and organize materials from sources other than a few textbooks or college courses. As the result of these weaknesses and undeveloped abilities, teachers are prone to take refuge in lesson-hearing and oral testing in the class period.

2. Sound Principles and Techniques of Good Lecturing

There are several fundamental principles of good lecturing which are worthy of careful consideration. Unless applied in a practical way, lecturing is not likely to be very effective.

Judicious Use of the Lecture.—The teacher must develop the capacity to decide wisely when to tell or lecture. Some types of occasions when lecturing may be profitable were enumerated earlier in this chapter. The teacher must constantly think of the possibility that a little telling or explaining might help, and at the same time be mindful that not only is time limited, but that the learner must not be deprived of as complete self-activity and self-direction as possible. The teacher must also be prepared to make explanations at any time in the daily class meeting when it may seem necessary, to refer members of the class to sources where they can discover the answers to their questions, and to cause them by questioning them to think through the answers to their questions.

In planning, the teacher should always be on the lookout for places where in the approach to a new unit or process an explanation should be made, where some inspiration should be given, or where a summary of materials seems to be needed. In all these decisions, a great deal of common sense must be employed in applying the principle that the best teaching is that which provides the best learning environment for the learner at all times.

Careful Preparation Is Essential, Especially for the Younger Teacher.—Good lectures, even the most informal ones, usually grow out of careful preparation and planning. Careful planning involves in every instance some if not all of the following elements:

1. Deciding how much time may be devoted to the lecture in terms of:
   (a) The time available
   (b) The importance of that which is to be told or explained
   (c) The amount of time necessary to do a good job
2. Familiarizing oneself with the materials or processes involved in the lecture, their relevant applications, and their relationships to other matters studied in the course
3. Thinking through what critical questions students are likely to ask and how they should be answered
4. Deciding what are the more important purposes and objectives of the explanation or lecture in terms of understanding, skills, appreciations, interests, etc.
5. Planning the sequence or outline of the lecture or explanation
6. Considering the apperceptive bases and backgrounds of the pupils, what they can understand, what will appeal to them and what knowledge and experience they possess which can be used as a basis for understanding
7. Thinking through the lecture or explanation to discover where examples, applications, or illustrations seem to be called for and planning these (this includes use of the blackboard)
8. Attempting to think of a few places where some interesting or amusing expression or example could be employed
9. Thinking of occasions where the lecture may be profitably interrupted briefly for a question to a student or to the class

10. Planning appropriate places to raise questions or to interest the learners in problems which the material following will answer
11. Planning the assignment or follow-up based on the lecture
12. Testing in advance all experiments, films, or apparatus to be used
13. Making of brief, easily read notes that will insure sequence and guarantee against forgetting
14. Familiarizing oneself with notes in advance of the lecture.

The foregoing suggestions apply to all explanations, but particularly to the longer lecture. In planning short explanatory remarks only a few of them may be relevant.

The Technique of the Lecture.—The procedures used in giving successful lectures are not all alike, nor are the techniques of a given successful lecturer the same on all occasions. Suggested procedures are, therefore, not intended to be followed slavishly, but as techniques which usually are appropriate and effective and more often than not may be safely followed. Among those which are of most importance and which are most commonly employed by successful lecturers in school are the following:

1. Make certain that all charts, diagrams, chemicals, apparatus, etc., to be used are at hand.
2. Quickly survey the room for possible distractions, noises, and bad seating arrangements and make appropriate adjustments.
3. Review quickly, just before beginning, the major objectives of the lecture.
4. Begin if possible by:
   (a) Arousing some curiosity or developing a problematic attitude by means of a question or problem
   (b) Giving the learners some idea of the principal things to be gained from the lecture
5. Adapt the pace of your presentation to the:
   (a) Ability of the class to follow you
   (b) Relative necessity for their reflecting upon what you have presented

   (With respect to pacing, speakers ordinarily make two mistakes:
   (a) Talking too rapidly
   (b) Employing the same pace throughout—too slow at times, too rapid at other times

   Adjust pace to difficulties of the material presented and to the ability of the class to take notes, if notes should be taken.)
6. Keep the class in a problem-solving and expectant attitude: raise questions and problems along the way; stop now and then to ask a question of an individual or the entire class.

7. Occasionally check up on your audience with a question or exercise to see if it is following you with understanding. Avoid the general practice of lecturers who assume far too much in the way of audience interest and audience understanding. What is crystal clear to a lecturer is frequently confusing to listeners.
8. Don't "lecture." Talk to your audience as individuals in so far as that is possible. Do not orate, read, or mumble. Employ interested, earnest, conversational tones and a natural, personal, conversational manner. Look into the faces of your hearers as if you were talking to them individually. Look from one to another, not out of the window, at the ceiling or the walls, and not too much at your notes and desk.
9. Do not forget to use your illustrations (diagrams, maps, stories, demonstrations, etc.).
10. Pause occasionally for questions and reactions, but do not permit too much digression. Do not stop to teach one pupil at the expense of the class. Do not ask the class, "Do you understand?" Ask a question to see if they understand.
11. Intersperse the telling with developmental questions, encouraging the students to think along with you and to cooperate in the telling.
12. On some occasions it is advisable to furnish the class with an outline of your talk in advance. This may be in the form of hectographed copies, or it may be written on the blackboard. Outlines of this sort serve as a constant summary and relieve the class of note-taking, which may be a distraction. A very good device to use when you are thoroughly familiar with what you expect to say is to outline your talk on the board as you proceed.
13. Exhibit a sense of humor in some other way than by using funny stories as illustrations. Phrase your remarks where possible in an interesting manner.
14. Do not be self-conscious and sensitive while you are talking. Beginning teachers are far too much inclined to regard all deviations from obvious attention as personal affronts; experienced lecturers learn to regard such things objectively.
15. Cultivate a good time-sense. The time usually seems much longer to your hearers than to you. Avoid digressions; they often serve as distractions rather than illustrations.
16. In some subjects pupils should be trained to take useful notes intelligently. Illustrate occasionally by making notes on your own talk on the board. Encourage the pupils to "write up" notes at the conclusion of the talk, and allow time for such an exercise. A good device is to permit students to work in pairs, or to consult each other while writing.

17. Hold your pupils definitely responsible for the content of talks and lectures.
18. Ascertain, as a means of diagnosis and as an aid in remedial teaching, what the pupils have learned from your talks. A short test immediately at the close of the lecture, or at the beginning of the next period, may be used for this purpose and may serve also as an inducement to careful attention.
19. Avoid either becoming too attentive to your notes or failing to follow them.
20. Emphasize beginnings of divisions of your talk by giving cues to topic sentences and the like.

Above all, always keep in mind these important points: (1) the objectives of the presentation; (2) the necessity that your pupils shall understand your presentation; (3) the necessity to be interesting, to be at ease, to be brief, and to employ the proper pace.

3. Types of Illustrative Material and Devices

Effectiveness of Illustration in Telling.—People prefer "illustrated" lectures. Merely to mention that a lecture is to be "illustrated" serves to increase materially the number who attend, if attendance is on a voluntary basis. Careful studies of salesmanship have resulted in conclusions favorable to use of illustrative materials. Executives in presenting information and plans to their boards of directors have likewise discovered their great value. Ministers employ anecdote and personal illustration. Newspapers and books are now using an increasing amount of pictorial and graphical material. Only teachers attempt to make their lectures effective with a minimum of illustration. It is likely that they use such materials so sparingly not because they believe it is unwise, but for other reasons: (1) it takes time to plan and make or obtain them; (2) the teachers were not taught the use of them; (3) the individual teacher may be a little short on imagination and creative ability; (4) he may believe that he can "get by" without using illustrations —although one reason for this belief is no doubt the teacher's failure to realize how little understood are the verbal explanations he gives in the classroom.

Types of Illustrative Materials Used in Telling.—Among the most valuable types of illustrative materials are the following:[1]

1. *Graphs* of expenditures, population, size, statistical data, time and dates, etc., in classes in history, the social studies, and science.

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[1] See Chapter 16 for a complete discussion of visual aids in teaching.

2. *Charts and diagrams* in the languages, history, the social studies, and science.
3. *Still pictures and slides* in practically all subjects, particularly science, the social studies, art, and home economics.
4. *Motion pictures* in physical education, shop subjects, and the social studies.
5. *Objects, specimens, and models* in mathematics, home economics, art, agriculture, and science.
6. *Verbal illustration* in literature, science, the social studies, and home economics.
7. *Demonstration* in art, physical education, music, and sciences.
8. *Drawings, diagrams, examples, etc.*, produced on the blackboard to explain, emphasize, and attract attention—in all subjects.

The Utility of Verbal Illustration.—In ordinary conversation verbal illustration is almost constantly employed. There is also general recognition that it is usually easiest to impress the listener and help him to understand and appreciate vicariously the experience or the summation of experience of the teller by giving him a clear and accurate verbal picture. Illustration by example or analogy likewise makes conversation much more interesting. That is because people are usually more interested in detail, in specific examples, and in individuals than they are in generalizations or abstractions, in spite of the greater value of the latter. In conversation the teller must be clear and interesting or he will lose his audience. While the teacher has advantages in the classroom which are absent in ordinary conversation, he will do well to bear this truth in mind.

Public speakers, particularly ministers, candidates for office, and entertainers, are conscious of the necessity for clarity, vividness, and maintenance of interest, and they have traditionally employed rich and appealing verbal illustrations in profusion. This practice is in accordance with the important principle of apperception. Since the beginning of history man has been concerned with actualities. While civilized man is becoming more and more interested in abstractions when appropriately educated to do so, it is too soon yet by at least several hundred generations for a typical man to be equally interested in them.

Suggestions for Use of Verbal Illustration.—Most important in using illustration is the ability to define, explain, and narrate in terms of the listener's previous experience. If he is to understand and to be interested, the telling must serve to call into his consciousness mental images of his previous experience, though perhaps in somewhat different organization and combination. In the application of this principle, common sense must be constantly and intelligently applied in telling, with particular attention to the following suggestions:

1. Decide what statements need amplification, illustration, and particularization.
2. Decide what important words or phrases that you are certain to use will be new or only slightly familiar to your listeners.
3. Select the explanation materials (words, examples, analogous or similar objects, processes, movements, ideas, or experiences) from those already well understood by the learner.
4. Occasionally, if in doubt about the listener's understanding, ask him to give an example or attempt an explanation.
5. Be certain that the explanation is not misleading, especially when an analogy is employed or a generalization is made.

Types of Verbal Illustration.—1. *The Anecdote or Story.* Some teachers are inclined to excessive use and misuse of verbal illustration. In the use of anecdote it is wise to emphasize very definitely what the anecdote illustrates. The "moral" must be put into clear focus. The teacher who misuses anecdotes often has the discouraging experience of learning that his students remember the anecdotes quite well but forget what points they illustrated.

Anecdotes may be used to particular advantage in teaching history, the social studies, biography, and appreciation of music, art, and literature. Teachers may well keep a card file of good stories and anecdotes, with references to them in their textbooks or files of lesson plans. They should be constantly on the lookout for appropriate new anecdotes for use in their teaching.

2. *Examples.* It is necessary at this point to stress the importance of employing well-chosen illustrative examples to make clear the meaning of important new words, phrases, ideas, procedures, movements, and other things being learned.

In planning for the explanations to be made in class the teacher should take time to think of good illustrative examples. (*Examples* does not have the meaning here of problems or exercises for the learners, but of individual instances that exemplify the idea, rule, word, or abstraction.) These examples should be typical of several varieties and should be selected from those likely to be familiar to the learners.

3. *Analogies.* Completely valid analogies are quite rare. Almost always there are material differences between the statement to be illustrated and the analogous statement. Sometimes the analogy is quite misleading unless these differences are clearly pointed out.

Because of its capacity for clarity and also because of its power to mislead subtly, the analogy is used frequently by advertisers, political speakers, and other propagandists to influence the thinking of untrained people to an extent and in a manner not possible with honest logic.

4. Learner Participation in Telling

Since the purpose of telling in the classroom is to produce desired effects upon the learner, the teller should constantly keep in mind the probable effects upon his listeners. Careful attention should therefore be given, particularly when telling is in the form of a lecture of some proportions, to (1) preparation of the listeners, (2) the character of their reactions during the telling, including the taking of notes and responses to checkups during the lecture, and (3) the follow-up.

Preparation of the Learner for the Lecture.—While there are many short tellings and some formal lectures for which no advance preparation of the learners is necessary, there are also many times when the formal lecture should be preceded by some sort of preparation of the pupils by the teacher, particularly if the lecture involves visual material. The most useful and most commonly used types of preparation are (1) developing a felt need for the lecture and (2) predirecting the attention of learners to the more important things to be gained from it.

As a means of insuring initial attention, maintaining it, and developing a scale of values for use with reference to various parts of the lecture, the teacher may often establish in the minds of the prospective listeners a felt need for explanation. This is often done by leading a discussion along such lines as (1) to create curiosity with respect to some matter, topic, or area, (2) to create a problematical situation, and (3) to reach a place in the activities of learners engaged on some project where additional information and understanding are needed.

Frequently too, it is worth while to inform pupils in advance of the purposes of the lecture, points of special significance, and what will be expected of them in the way of follow-up—summaries, quizzes, applications, and the like.

Note-taking.—Encouraging pupils to take notes during a lecture may serve one or more of several purposes: (1) to encourage them to pay better attention; (2) to induce them to analyze the content of the lecture, to bring into relief its more important divisions and the interrelations of its various parts and points; (3) to provide a record for the purposes of reference and review; and (4) to develop skills in note-taking, in the processes of judgment of relative values, generalization, organization and interrelation, and in other types of mental activity involved in note-taking. The lecturer should recognize the training of his hearers in note-taking during lectures. Occasionally he may outline his lecture as he talks. Sometimes he should furnish the students at the end of a lecture with a copy of an outline or of his own notes, either on paper or written on the blackboard.

Some of the more important suggestions for note-taking are given in the following paragraphs.

The notes should give relative rank to the more important points, showing what points are coordinate and what ones "come under" or are subordinate to the major points (as in the case of varieties of the main point, examples of it, divisions of it, arguments for or against it, etc.). This may be done best by the use of some sort of outline form of organization, although insistence upon too rigid and complex a form of outline may serve to distract, confuse, and discourage the note-taker.

Notes should not be too full. The note-taker should learn to use abbreviations, e.g., "Form of govt., 3 br., leg., judic., and exec." He should not attempt to write down everything that is said. He should learn to condense. Notes are usually cues which will enable the pupil to call to mind the main points of the lecture, not to give a transcript of it. The taking of notes must be incidental and must not distract the listener's attention from the lecture.

Notes should not necessarily be in the words of the lecturer, but usually should be at least in part in the words of the listener, who should learn to reword the lecture in the interest of brevity and to assure that he really understands them.

As soon as possible after the lecture, *the pupil should go over his notes,* reorganizing them into coordinate and subordinate points. Until the note-taker becomes quite proficient, he should rewrite his notes soon after the lecture. It is wise whenever possible to allow the listeners a few minutes to rewrite their notes and to ask questions concerning them. Occasionally students should be advised at the end of a lecture to compare their notes with those of one or more other listeners near them.

Pupils should be trained to look for the divisions and subdivisions of a lecture, for key and topic sentences.

Checking Up on Learner Participation.—It is feasible for lecturers to check on their listeners in order (1) to see if they are being attentive, (2) to arouse and stimulate interest and attention, and (3) to learn to what extent the lecture is being understood and what supplementation or amplification is needed. This may be done in a number of ways including:

1. Asking a pupil for a summary or restatement of what has just been said
2. Calling for an illustrative example
3. Asking for criticism or expression of doubt
4. Calling for an application of what has been said
5. Providing an opportunity for any listener to ask a question
6. Requiring a student to read his notes
7. Shifting temporarily from the lecture to a discussion or oral quiz procedure

The beginning teacher may be surprised if not a little discouraged to discover in checking up that pupils' actual impressions and understandings fall short of what the teacher had planned and hoped. He may discover that if he said, "John Knox was dispatched to the galleys," some pupil will probably think that John Knox was executed on the gallows.

The Learner as Teller.—In many courses there are frequent occasions on which one or more of the learners themselves may lecture, report or discuss at length some topic in the course or some particular outgrowth of it which they have investigated further than other members of the class. The teacher should take time to provide a little individual help for pupil-lecturers, assisting them in organization, in judging time required, in selection for emphasis, in note-making, and in the choice and use of illustrative materials.

The Follow-up.—The follow-up is important and should ordinarily be planned to carry out one or more of the following purposes: (1) to discover misunderstandings and needs for remedial or supplementary explanations, (2) to motivate attention and mental activity during the lecture, (3) to cause learners to react to the lecture and to reorganize the materials, (4) to fix and make more permanent the relation of materials, (5) to increase understanding and insight relative to the materials.

There are several types of appropriate follow-up activities for use with the lecture such as the open discussion, the oral quiz, the written quiz, the assignment of written exercises or of rewriting notes taken, and further reading on the topic. After most lectures, explanations, or "tellings," as well as after the use of visual materials requiring more than a few minutes, it is wise to make definite provision for some sort of follow-up which will serve at least the following purposes: (1) to see if there has been failure in understanding essential and important points, (2) to connect and relate parts or points, (3) to discover the degree to which a sound basis has been established for further progress, and (4) to stimulate further interest and activity. What type of follow-up is best depends upon the nature of the material and other circumstances.

QUESTIONS, PROBLEMS, AND EXERCISES

1. Why is there such general agreement that there should be no "lecture" courses in high school?
2. Select a certain high school subject and give examples of appropriate places for the use of "lectures" or "telling" or "explaining" at some length.
3. What, if any, is the place of "telling" or "lectures" in the teaching of habits? of ideals? of interests? of skills?
4. Mention the most common remediable faults of "lecturing."
5. What are the important characteristics of good "lectures"?
6. Discuss the use of visual aids and concrete objects in relation to lecturing.
7. Explain how and when the use of telling or lecturing by students might be effective.
8. Do you believe the lecturer should use humorous stories? any other kinds of stories or anecdotes? Give reasons for your answer.
9. Select a certain high school subject and indicate how you would check up on or follow up a lecture you might give in that subject.
10. Of the various methods suggested in this chapter for making telling effective, select six or seven which you think are the most effective and be able to tell why you think they are the most effective.
11. Make an outline or notes for a lecture you might give on a certain topic in some particular high school subject.

Chapter 13

DRILL, PRACTICE, AND REVIEW PROCEDURES

1. The Function of Repetition and Practice in Learning

The place and value of drill in learning and teaching has been the subject of much controversy in recent years. Drill was once regarded as a most valuable approach to learning, and a considerable portion of the activities of the classroom was of the nature of drill, individual and group, oral and written, physical and mental. In the 1920's and 1930's less time and attention were given to drill and more reliance was placed upon incidental learning and learning through use and application. More recently teachers have been more and more convinced that desired results cannot be obtained without drilling on significant factual materials, and on specific elements of habits and drills.

There was early acceptance of the theory that learning is facilitated by repetition of what it is desired to learn. To commit passages, dates, names, or facts to memory called for repeating the passages. To acquire a habit of action, speech, or thought, one must repeatedly act, speak, or think in a certain particular way. To develop a physical or mental skill, one must repeat an act or mental procedure many times, each time attempting to perform in a manner similar to the pattern of skill desired. Conversely the less frequently one repeated or used the thing learned (or partly learned), the more it tended to be forgotten or to decrease in quality and speed of performance.

The Laws of Use and Disuse.—These two principles of learning were referred to as the *law of use or repetition* and the *law of disuse.* For generations they constituted together the fundamental and most important basic principle of learning. As our concepts of learning have been clarified, it has become obvious that practice, repetition, use, or drill is only one, though an essential one, of the important factors of learning. Other principles such as the principle of attention or interest, the principle of intensity, the principle of recency, the principle of understanding, and the principle of readiness have come to be understood and to be observed more seriously.

Mere repetition without regard to the degree of attention or motivation, to the degree of understanding of what is to be learned, or to the degree to which the learner is ready by reason of maturity or adequate apperceptive background is not very efficient. Sentences of many words, if they are well understood and if they concern matters in which the learner is interested and with which he is well acquainted, may be memorized with a few repetitions, especially if the learner wishes genuinely to memorize them. On the other hand, sentences of little meaning and interest to the learner require many more repetitions. One memorizes nonsense words with great difficulty and only after many repetitions. Likewise, if the unmotivated learner goes listlessly through motions of physical learning aimed at the acquisition of a particular habit or skill, he will require many more repetitions than he otherwise would and is not likely ever to reach a high degree of perfection or certainty of response.

2. KNOWING WHEN TO EMPLOY DRILL

Types of Situations Which Call for Drill.—It is important that the teacher know when to employ drill procedures. The general types of learning in which drill procedures may be useful are as follows:

1. Memorizing verbatim definitions, principles, laws, or passages
2. Learning specific facts such as the capitals of countries, specific gravity or atomic weight of elements and standard compounds, approximate populations of cities or countries, spelling of words, numerical sums, differences, multiples, and quotients, and vocabularies in foreign languages
3. Learning the "gist" of things (retention of the bulk of main ideas without reference to the exact words of statement), e.g., telling with fair accuracy the story of the more important happenings in the French Revolution, the terms of the Treaty of Westphalia, the nature of the fermentation process, or the system of circulation and purification of the blood
4. Development of a physical or mental skill, e.g., typewriting, pronunciations in a foreign language, manipulation of machines in a laboratory, representation on canvas, by means of sculpturing, reading music or playing an instrument, fielding, pitching, and batting in baseball, or conversational dexterity.

5. Development of a habit or unified set of habits, e.g., putting away tools and materials, always acknowledging a greeting or a favor, being on time at meetings of all sorts, or keeping a certain schedule or sequence (The development of an attitude is much like the development of a habit, being really a more or less habitual way of responding mentally or emotionally to a given idea or situation.)

In the first place the teacher must decide within the scope of his field of teaching what rules, principles, laws, facts, or definitions are important enough to be memorized verbatim and what ones the pupil needs to remember only in the gist, what skills are required and to what degree they must be developed, and what habits should be acquired and to what degree of fixation. These decisions are to be made partly in advance of the year, semester, and unit of teaching, and partly from day to day as learning proceeds. Likewise the teacher is responsible for discovering or assisting the learner to discover what particular elements of a skill or set of facts need special attention in the form of drill.

Drill, Diagnosis, and Individualization.—Often drill must follow diagnosis and consequently is to a considerable extent an individual matter. For example, to improve skill in penmanship, it is not only necessary to have drill in general; after some skill has been developed, further development will result only if attention is focused upon weaknesses, and drill upon the correct forms is employed as a means to substitute them for errors. In various sports, drill upon certain elements (e.g., "putting" in golf, following through in tennis, golf, and baseball, sliding in baseball, pivoting, dribbling, or a certain kind of shot in basketball) is known to produce results not attainable from more natural comprehensive and complex practice.[1]

Because individuals vary in their need for practice, particularly after the initial stage, the intelligent way to use drill is in connection with diagnostic procedures which will disclose the particular place or element requiring drill. Without diagnosis much time is wasted in drill where drill is not needed. With diagnosis, drill becomes somewhat an individual matter. Superior teachers, therefore, have developed drill materials or have adopted commercially published ones, and they use procedures which can be employed by the learner without the continued presence of the teacher. Drill materials and often diagnostic tests or procedures are provided in many textbooks, especially those in mathematics.

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[1] See Chapter 19, "Adapting Instruction to the Individual," particularly the material on diagnostic and remedial procedures.

Drill in Mathematics.—In mathematics the need for drill is great. On paper and on the board, drill for the development of skill in the manipulative procedures must be continued until a reasonable degree of mastery is acquired. There should be drill on the form of statement of solutions, on the form of notation, on the form of a proof, on habits of speech, and on axioms and their applications. There should be occasional review drill in which material from several different procedures is mixed, calling for a decision as to which type of procedure is involved. Gradually drill should shift from the simple process to more complicated applications and should be continued at the latter level until mastery is attained.

Drill in Foreign Languages.—In the teaching and learning of a foreign language the need for drill is great, both in class and out, group and individual. There must be frequent drill in pronunciation, probably much more than is common in most classrooms today. There should be in the first year at any rate almost daily vocabulary drill, either in class or out. Some of this drill should be given in the classroom as a model for self-drill. Most textbooks provide drill material for acquiring vocabulary together with grammatical information. Drill on declensions and conjugations as well as on many other fundamentals must be ample, well motivated, and organized with a view to diagnosis and remedial explanation and drill.

Drill in Science Classes.—In chemistry there are various sets of data, such as specific gravities and atomic weights, which must be learned. Charts for visualization are available and are used in many schools. Modern practice has divided such bodies of data into groups dealing with related substances. There are in both physics and chemistry laws, equations, and formulas to be learned which class group drill will help to fix in the learner's mind. In biological science it is sometimes necessary to memorize names and plant and animal classifications. In all science classes there is need for occasional drill on laws, terminology, and definitions, including prefixes and suffixes such as *-ate, -ide,* and *-ite.* Occasionally there is need, especially in physics, for drill on appropriate mathematical processes, for example, ratio and proportion, decimals, and percentage.

Drill in History and the Social Studies.—Incidental learning is not enough to provide for retention of many essentials in history. From time to time it is wise to provide for drill on sequences of events, dates, and groups of names or events. The wise teacher is careful to select for drill the items most likely to be of importance, especially as an apperceptive basis for matters to be studied later in the course. Occasional drill, particularly self-drill, must be employed to memorize quotations from the most important documents (for example, the Bill of Rights as set forth in amendments to the Constitution of the United States) and from writing or speeches of extremely great importance, for example, the Gettysburg Address by Abraham Lincoln.

Drill in Typewriting, Bookkeeping, and Shorthand.[2]—A great deal of instruction in typewriting, bookkeeping, and shorthand is of the nature of drill. In each of these subjects there is necessity for daily practice. In teaching typing and shorthand, group drill is used very extensively. Many teachers of typewriting are convinced that keyboard practice is improved by the use of phonograph records, which provide a rhythm suited to the desired speed, thereby relieving tension.

Drill in English, Speech, and Exposition.—Drills on a wide variety of subject-matter are needed for the mastery of oral and written expression. Among these subjects are enunciation, pronunciation, impromptu oral expression, vocabulary, syntax, and grammar.

In the high school, much of the drill in classes in speech and composition should follow diagnosis based upon the uses of such tests as the Pressey Diagnostic Tests in English Composition, the Tressler English Minimum Essential Tests, and the Rinsland-Bech National Tests of English Usage.

In the high school years much remains to be done in the way of perfecting skills in reading and correcting faults in reading habits. Classroom drill should be provided in rapid reading and also in comprehension of sentences and paragraphs.

Drill in Shop and Laboratory.—While it is no longer considered economical to insist upon a great deal of preliminary shop drill to develop basic skills with various tools, it is necessary to provide some drill before the learner is permitted to construct something. Usually this drill consists of a brief introductory experience to remove difficulties which impede his development of skills. After the individual has begun work on constructive projects, he should occasionally be drilled on the use of a tool when it is apparent he is lacking in proficiency.

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[2] See E. G. Blackstone and S. L. Hall, *Improvement of Instruction in Typewriting*, Chs. 9, 10, 11, and 14.

Drill in Physical Education.—As in other subjects, drill now occupies a lesser place than formerly in physical education and sports. In the years when authoritarianism predominated and false conceptions of the phenomenon of formal discipline obscured the facts of learning, drill was the principal type of activity, and in some schools the sole type. Formal calisthenics and apparatus work represented the chief activity. This gave way to group play and games in which formal drill, except in highly competitive athletics, tended to disappear. In recent years there has been a tendency to include some formal drill on basic skills and exercises in games. In the more highly skilled games, diagnostic drills occupy a prominent place.

Drill in All Subjects.—More and more teachers are becoming teachers of young people rather than of subjects and in consequence are alert to the opportunities for contributing to the growth of young people along lines not peculiar to the subjects of teacher specialization. The better teachers are quick to seize an opportunity to provide drill now and then for the development of desirable skills and habits of action and thought which are not essential in their particular subject, e.g., habits of suspended judgment, speech habits, writing habits, habits of self-criticism of one's own ideas, habits of social manners, and skills in analysis. Drill in the use of library materials should be given special attention in a number of subjects, particularly English, science, and social studies.

In every subject, drill should be closely correlated with diagnostic testing and observation which will bring into relief the necessity of drill to bolster weak spots and to develop the skills, habits, or ability to recall to the desired level.

For drill in several subjects (particularly English language, mathematics, and foreign languages) there are available workbooks, drill pads, exercise books, and other materials of various sorts. In addition, many texts include drill materials in various forms, e.g., vocabulary lists and problems. Teachers should develop lists of materials for use at the end of units for the purpose of automatizing the more important facts, habits, and skills.

Self-Drill.—In the high school, pupils are mature enough to drill themselves. Self-drill needs to be well motivated, and progress must be noted by the teacher. Teachers should provide drill materials for young learners to use at home, or in the study hall and library. The teacher must lead in such a way as to leave no doubt that the skill, habit, or ability to recall is really essential; it goes without saying that drill should not be required if there is considerable doubt on the part of the teacher. As it is now, teachers attempt to teach too much material, and youngsters learn too superficially.

3. PRINCIPLES AND PROCEDURES

Commonly Recognized Principles.—There are some fairly well recognized procedures of drill which apply universally, regardless of whether the objective is acquisition of information, memorization, development of skills, or formation of habits. Among those commonly recognized are the following:

1. *A desire to learn* should be developed.
2. The drill procedure should be a *cheerful activity*—perhaps rhythmic accompanied by music.
3. *Drill should be discontinued* if boredom appears, attention is lost, or interest wanes.
4. There should be *freedom from distractions* such as noises or other stimuli likely to divert attention in part.
5. *Drill situations involving novelty* are relatively more effective than those which have grown stale through repetition.
6. There should be a physical and mental *attitude of attention and alertness.*
7. Repetition should become more and more *focused upon the weak spots.*
8. Care should be taken to *notice errors and omissions,* which should be corrected at the first appearance.
9. Drill exercises for a given set of materials, skills, or habits *should not be too infrequent.* On important new material they should be repeated daily at first, then at intervals of increasing length or in progressively briefer drill periods. If possible, drill on new material should be conducted two or three times a day in the initial stages.
10. Class drill must be supplemented or replaced by *individual drill* devised to meet the particular needs of the individual learner.
11. *The learning situation should not be complicated at first.* Long passages should not first be learned as wholes.
12. *Artificial situations and "crutches" should be used sparingly,* since they must eventually be discarded; but there are some situations in which, due to the learner's relative immaturity, they are almost indispensable.

13. As soon as practical, *practice in applying the drill* should supplant or be interspersed with pure drill.
14. Unless continued application may be counted upon, *drill must be continued past the stage of desired proficiency* as a guarantee of relatively permanent retention.
15. Unless use is made of the new acquisition, *provision must be made for review* or maintenance drill.

Devices for Motivating Drill and Holding Adequate Attention.—Perhaps the principal problem in drill is that of keeping attention at a high level and keeping the learner interested both in making progress and in participating wholeheartedly in the drill. Among the devices which have been employed to advantage are:

1. Schemes of competition, individual and group
2. Graphic records of individuals, of groups, of class, of school
3. Employment of a brisk procedure to keep learners at their maximum performance
4. Use of visual devices such as flash cards
5. Use of phonograph records, particularly in classes in typing and physical education

A more complete discussion of motivation, interest, and attention has been given in Chapter 4.

Suggestions for Memory Drill.—The following suggestions apply to drill for remembering as opposed to drill for the development of skills or habits:

1. The meaning of the material to be memorized or remembered should be understood by the learner.
2. If there is any definite sequence in the items to be memorized, as in a poem, a description, or a narrative, it should be set before the pupil as a framework. Outlines are very helpful in this connection.
3. If there is no natural sequence of organization, often an artificial one which will be helpful can be worked out.
4. Search should be made for other types of associations which will assist memory, such as peculiarities, resemblances, contrasts, and alliterations.
5. Attempts to recall parts should be made soon after understanding has been reasonably well achieved and after a few repetitions.
6. Units for recall practice should be units with respect to meaning or with respect to rhythm and punctuation, preferably both where they coincide.
7. Avoid discouragement on the learner's part—especially on the part of self-conscious individuals.

The most important aids to memorizing are (1) a sound basis of understanding of the meaning of the materials, (2) the early use of recall, and (3) the establishment of associations (a) between various parts of the material and (b) with other ideas, words, and objects.

Examples of memory devices are the following:[8]

1. To assist in remembering the order of the ruling families in England:

No	Norman
plan	Plantagenet
like	Lancaster
yours	York
to	Tudor
study	Stuart
our	Orange
history or	Hanover or
biography	Brunswick

2. To assist in the retention and recall of the countries that composed the Holy Alliance:

H	Holy	Holy	Holy
A	Alliance	Alliance	Alliance
R	Russia	Religion	Reactionary
A	Austria	and	Absolutism
P	Prussia	Peace Pretender	Promoted

Physics students may recall the colors of the spectrum through the use of the word V-I-B-G-Y-O-R (violet, indigo, blue, green, yellow, orange, red). Whether or not such devices as these are used, some organization should be made so that the materials will be associated and the mind will tend to form associative bonds. When details to be learned can be organized into rhyme or rhythm or both, learning is facilitated; for example: "*I* before *e*, except after *c*"; "Thirty days hath September, April, June, and November"; etc.

Good foreign-language teachers have devised dozens of schemes and arrangements of facts to be learned, e.g., methods of forming the various tenses, cases, numbers, moods, etc. Mathematics teachers have used such schemes as the following for remembering values of trigonometric functions:

	0°	30°	45°	60°	90°
sin	$\frac{1}{2}\sqrt{0}$	$\frac{1}{2}\sqrt{1}$	$\frac{1}{2}\sqrt{2}$	$\frac{1}{2}\sqrt{3}$	$\frac{1}{2}\sqrt{4}$
cos	$\frac{1}{2}\sqrt{4}$	$\frac{1}{2}\sqrt{3}$	$\frac{1}{2}\sqrt{2}$	$\frac{1}{2}\sqrt{1}$	$\frac{1}{2}\sqrt{0}$

Music teachers have similar helps for remembering the location of notes on the scale and the interpretation of signatures.

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[8] From *Modern Methods in High School Teaching*, by Hart R. Boston: Houghton Mifflin Co., pp. 155-156.

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Suggestions for Drill for Development of Skills or Habits.—In addition to the general suggestions on pages 88-90, the following ones apply to the development of skills or habits:[4]

1. The learner should have in mind a clear idea of the response expected of him.
2. In the case of complex responses or activities, the learner should be furnished separately with an explanation or demonstration of the activity in parts or elements. For example, in teaching correct pronunciation in a foreign language, there is often need for discussing the position of the tongue, opening of the throat, and similar elements of procedure in pronouncing the particular words or sounds.
3. Knowledge of the goal and of progress toward it are favorable to interest and rapid learning, except where the progress is so slow as to discourage or confuse the learner.
4. Habits and skills should be acquired in situations as nearly as possible like those in which they will be used.
5. Adjust the pace of drill to circumstances, the maturity and development of the learner, and the complexity of the response. Drill should be brisk and quick, but not so fast as to encourage errors or to discourage the learner.
6. The instructor should determine what degree of thoroughness is desirable for the habit or skill, that time be not wasted in continuing drill after the determined level has been reached. On the other hand, it is desirable to continue drill in some skills to the point of "overlearning" as a means of insuring permanency.
7. Always subordinate speed to accuracy in the early stages. The fact that rapid performers are accurate performers does not mean that, for a given individual, the more rapidly he works the more accurate he will become.
8. Where there is a choice as to sequence, the initial procedure to be developed as a skill should be relatively interesting and not too difficult. Naturally, care should be exercised to see that prerequisite elements come first. Sometimes drill should be first upon two or more similar skills which then are combined into a more complex one.
9. Drill performance should be carefully scrutinized for deviation from the desired pattern. Error should be eliminated as early as possible so that incorrect elements do not become fixed.
10. After preliminary drill revealing errors, remedial drill should be focused upon the incorrect or weaker elements. When accuracy in these is achieved, they may then be integrated with the other elements and the complex whole. Golfers spend hours practicing

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[4] Adapted and revised material from *Modern Methods in High School Teaching*, by Harl R. Douglass, Boston: Houghton Mifflin Co., pp. 22-24.

various specific elements in performance in which they are least proficient.

The most important points in developing skills and habits are (1) that the learner shall have a clear picture of what he is to do and shall do it correctly the first time and (2) that his performance shall be analyzed and diagnosed for errors or omissions. Demonstrations of performance give a clearer picture than verbal directions of what movements or elements are involved in what the learner is learning. In the demonstration, attention should be called to important elements and those likely to be overlooked by the learner. Even more effective when available are slow motion pictures. Series of pictures of sequences in the skill are also valuable in many situations.

Oral Quiz as Drill.—A rather effective method of drill is the oral quiz. Many teachers of mathematics, of foreign languages, and of history start off class periods with a brisk oral quiz, asking questions at random of members of the class and covering the most important of such items of the day's work as may be recited briefly. This learning exercise, which should not occupy more than ten or twelve minutes, not only serves the purpose of providing class drill but also acts as an incentive to preparation. It is particularly appropriate for such items as vocabularies, important specific facts in science and history, mental mathematics (i.e., without pencil and paper), and dates in history.

It should be remembered that, in an oral quiz of this sort, a response, though not spoken, is given to each question by all or practically all members of the class and that attention is focused upon the correct answer. It is often effective to have a member of the class act as secretary and write on the front board each question and each answer in abbreviated form.

Application as Drill.—Perhaps it is not necessary or even useful to attempt to distinguish sharply between drill and application, between pure drill and applied drill. It should be clear, however, that while pure drill may be and often is called for by the needs of the learner in the particular situation, it is more interesting to acquire skills, habits, and information from applied and more life-like situations.

4. The Review Procedure

Place of the Review in Teaching.—The value of review exercises in the development of ideals, attitudes, and interests is difficult to evaluate. Perhaps ideals may be renewed, attitudes reinforced, and interests revived by review exercises; but more likely than not, better progress could be made, in so far as these outcomes of teaching are concerned, by going on into new materials.

On the other hand, when a body of information has just been considered, even though it consists of but few items, review in the way of summary is quite desirable and effective. Where acquisition of information is the goal, it is better to review than to be satisfied with half-mastery.

In training in skills and habits, even after drills have made the response automatic and accurate, it is necessary to repeat them occasionally to offset the possibility of forgetting.

Reviews should not be considered as synonymous with drill, however similar in some instances the two learning activities may be. The drill exercise is concerned with repetition for the sake of rendering the response automatic and accurate. A review serves to assist in these ends, but it has distinctly different ends and aims. Nor are reviews to be considered as synonymous with tests, or as a type of test, though reviews may serve to test.

Purposes of the Review.—Review differs from drill in respect both to the purposes and to the procedures involved. The distinctive purposes of the review are:

1. To assist the pupil in perceiving significant relationships among the various elements in a body of subject matter
2. To give emphasis to the important concepts in a daily lesson, unit, or course
3. To lead the pupil to see the different parts of a course in their proper perspective
4. To promote greater permanence of learning
5. To serve as the basis for diagnosis of a pupil's difficulties in the reorganization of learning materials, which is essential to the development of new meanings
6. To provide a more satisfactory apperceptive basis for new types of units
7. To furnish an additional clue to evaluation of the pupil's achievement

Occasions for Review.—In order to achieve the purposes stated in the preceding list, reviews should be conducted at various times. In schools in which the more traditional type of daily recitation is in vogue, the review of the preceding day's work may properly come at the beginning of the class period. This type of review serves to reinforce the knowledge acquired in the class the previous day. It also assists pupils in seeing the materials of instruction in their proper sequence. The daily review also may be in the form of a summary at the close of the class period.

In the conventional course, the review may likewise encompass the material covered in a week, month, or semester. Some teachers devote part of the class period one day each week (usually Monday or Friday) to a review of the work of the week concluded. The weekly review can be justified in that it contributes to more complete understanding and retention of the most significant material studied the previous week. The weekly reviews should usually be brief and well planned.

The review which immediately precedes period and final examinations is perhaps the most frequently used. Since pupils are motivated in this type of review by the impending test, the teacher is presented with an excellent opportunity to achieve many of the purposes of the review, particularly the proper emphasis on important materials and the mastery of the most significant concepts in the course.

The review is also essential in the unit method of teaching. In the presentation phase of unit teaching, considerable attention should be given to reviewing the previous unit and relating it to the new unit. Since new learning experiences are built upon previous experiences, the review serves as a necessary foundation for the study of the new unit. The review may be one of the culminating activities of a unit. In this connection the review may take the form of a summary by pupils or the teacher of the main outcomes of the unit.

Technique of the Review.—The technique of the review depends upon the particular purpose it is to serve. If retention of factual material is the main function, the question-and-answer method or oral presentation by the teacher may be the most effective procedure. Regardless of the particular method employed in the review, provision should be made to present the materials not as isolated facts but in their proper relationships to one another.

Many teachers utilize what may be called the *cumulative review,* in which all the previous work of the class is brought up to date daily or at longer regular intervals. As the reviews proceed, it is necessary to condense the earlier materials more each time. These summaries can usually be kept within the proper time limits by presentation in the form of brief lectures by the teacher or individual pupils.

The results of the review may reveal definite deficiencies in the pupils' learning. Many teachers have selected the most important of these for emphasis in subsequent reviews. Items of this type from several reviews may be organized for presentation in a resurvey. Care should be exercised not to include too many such items at any one time but rather to concentrate upon the main ones.

The Problem Review.—The materials to be included in a review may be grouped around a problem. A geography teacher might ask the question "Why do so many people spend their summers in Colorado?" This constitutes an excellent review problem. To answer it requires not only application of the pupils' knowledge of the influence of altitude and humidity upon temperature, but an understanding of differences in topography, scenic beauty, mountain recreation, and densities in population. Similar review problems can be framed for all high school courses. In American history, for example, the question might be: "In what respects is Jeffersonian democracy obsolete in the twentieth century?"

A consideration of problems of these types involves the seeking of answers to questions such as the following:

1. *Cause and effect,* e.g.: Why are the summer nights so much cooler in Colorado than they are in St. Louis?
2. *Comparison,* e.g.: Compare the mountains to the seashore as a desirable place for recreation.
3. *Selective recall,* e.g.: Name all the presidents of the United States who were born in Virginia.
4. *Summary questions,* e.g.: Give a brief account of the unification of Germany.
5. *Analysis,* e.g.: What sort of person do you think George Bernard Shaw is, judging from his writings?

The Socialized Review.—Some of the techniques of socialized procedure can be adapted to the review. Various devices have been used to encourage pupil participation. One of the most widely used plans is to ask a student to formulate a question based on the topic and designate another member of the class to answer it. The student who gives the answer formulates and asks another question. The questioning continues until each pupil has participated or until the content is covered. The questions of the different students may not be closely related, so that the result is the recitation of a series of isolated facts. This disadvantage, however, is usually offset by increased pupil interest in comparison with other methods. Perhaps it is advisable to utilize this method only occasionally to add variety to teaching procedures.

A form of the oral examination for a doctorate has been utilized in which different students in the class take turns in being the "candidate" and the other members of the class ask him questions based on the topic or unit.

Review Quizzes.—Students may overestimate their knowledge of a course and thus fail to make adequate preparation for a review lesson. Some of the devices described in previous pages may serve to stimulate interest, and the contest idea also has been effectively used. Short written tests on the materials included in the review serve to motivate pupils as well as provide a basis for diagnosis.

Characteristics of Good Review Procedures.—Because of the nature of their purpose reviews should be *selective*. It is neither practical nor desirable to attempt review of all the material covered once in the course. A great deal of detail is included in learning materials as background to the understanding of the more important points and is not in itself of much importance. Naturally the review will not be focused upon those details.

Second, the review should usually be such as to stimulate or to provide *reorganization of learnings,* to coordinate and to connect materials and learnings which were acquired on different days and at different periods throughout the interval covered by the review. One of its purposes is to train pupils in organizing their learnings and in getting overviews and perspectives of large amounts of material.

The review should also furnish a basis for *locating weaknesses of learners* relative to the more important expected outcomes of the learning activities and materials being reviewed as the basis of a final reteaching or relearning.

One of the greatest limitations of the review is the possibility that verbatim recitation will be accepted as learning. This is particularly true if material is reviewed in too great quantity or too minutely. Review should be concentrated upon a small number of large and important ideas and their subdivisions. Care should be taken, therefore, to be certain that materials recited by the learner are adequately understood. The teacher should also carefully plan each review at the end of a major unit of instruction so that it will not encourage "cramming." Testing involving recall at the end of shorter units constitutes excellent review.

Times for Review.—Occasionally it is wise to review the discussion of a preceding class period for the purposes of (1) giving the students some idea of the degree to which they have mastered it, and hence of the amount of further study they should give to what has been covered; (2) pulling together and coordinating the ideas of the discussion; and (3) furnishing a summary. Quite frequently it is wise to start off a class period with a brief account of what has just been covered as a means of setting the stage for the new discussion. Sometimes a brief review should precede an assignment as a means of showing how the new work grows out of and extends the old. Reviews should come regularly at the end of large units of instruction, covering several weeks of study. Reviews at the end of the semester are usually wise in almost all subjects.

Questions, Problems, and Exercises

1. What do you think *drill* means? Be specific.
2. Select a certain high school subject and be prepared to say whether you think drill should be frequently employed in teaching that subject. Give several examples in addition to those mentioned in this book.
3. Select from a certain high school subject a place where you would use drill and tell specifically how you would go about it, what materials you would use, etc.
4. From the commonly recognized principles of drill select the five most important and give reasons for your selection.
5. What are the principal differences in drill for learning facts and drill for learning skills or habits?
6. What is the difference between drill and review? In what way are they associated? Select from a high school subject a section requiring four to six weeks to teach. Write a plan for a review for that section including several review questions.
7. What is the relationship between review and diagnostic remedial procedures? between review and drill?
8. Is there any place for review or drill in developing interests, ideals, tastes, attitudes, or concepts? any connection at all between any of these and review or drill?
9. Discuss the relationship between spacing of review and forgetting; between drill and forgetting.
10. Discuss drill and application problems; review and application problems.

Chapter 14

USING QUESTIONS AND PROBLEMS IN TEACHING

1. Questions and Types of Questions

The Use of Questions.—The question is the prevailing type of teacher-and-pupil classroom activity and is fundamental to any conception of learning. In spite of the tendency to minimize recitations as such and to make use, instead, of such methods as problem-project activities, socialized recitations, visual instruction and other techniques, questioning still occupies as much class-period time as all the other types of teaching combined.

The method of questioning has become much more complex than formerly in the modern school, with emphasis being placed upon the ability of the pupil to generalize, to interpret facts, and to do more than merely repeat facts learned from a text. It is apparent that there are many possibilities for the use of the question, but the method is too often poorly employed.

Reasons for this failure of teachers to be more adept at questioning are obvious. The teacher-training period is of necessity short, and there is little opportunity for the student either to develop the technique or to observe those who are proficient. Beginners have a tendency to imitate the methods of their high school or college professors. Since the beginning teacher is also quite dependent upon the textbook for information and guidance, it is natural to use textbook material previously assigned for classroom quizzes. The question may be extensively utilized as a stimulus to learning, and it is essential that the teacher become skillful in its use.

The question should be thought of not only as a means of, but also as part of the give and take of the classroom. Among the purposes for which the question should be employed are:

1. To ascertain the degree to which the class and individual pupils:
   (a) Have mastered the content of the lesson
   (b) Have attained correct understanding of the material
   (c) Have developed methods of thinking

2. To provide practice or drill on material
3. To direct attention to important points and phases of the work
4. To give organization to the material studied
5. To stimulate interest in the work at hand by arousing curiosity, raising problems, etc.
6. To stimulate thinking on the part of pupils:
   (a) In developing subject matter
   (b) In applying subject matter
   (c) In evaluating subject matter
7. To discover interests of pupils
8. To furnish incentive for careful preparation by careful checking
9. To relate student experiences to the lesson

The question-and-answer method has great possibilities for teaching, drilling, guiding, and stimulating and should not be subordinated to the use of the method for testing purposes only. This testing function will be discharged incidentally as questioning is carried on to meet these other ends.

Questioning and the Outcomes of Teaching.—The questioning procedure can be used to advantage in the development of the various outcomes of teaching. While questioning may contribute more directly to the development of information and appreciations, it can also facilitate the development of habits and skills of all sorts. Through skillful use of the question it is possible to give training in thinking, in problem solving, and in generalizing. Since there is no doubt that the primary function of the question is to stimulate thought, it should be widely utilized as a technique for problem solving. Questioning can furnish the necessary training for meeting and attacking problems, that is: to see clearly and definitely the problem and its exact nature, to plan the attack, to guide the procedure, and to discourage premature conclusions.

Suggestion is a more effective method in the development of such outcomes as attitudes, ideals, and interests than are more direct means. The question lends itself very well to this art when it is skillfully applied. At present it is realized that these outcomes are very much to be desired and that every possible means should be used to attain them. Ideals cannot be taught like the ordinary facts of a chemistry lesson. They come as a result of experience which has suggested the emotionalization of standards. Skillful handling of the questioning procedure is effective in stimulating thought and feeling on these matters. In order to develop tastes, it is necessary to give the pupil experiences which he can analyze for points of merit, beauty, and enjoyment. These he must "discover" for himself and not have them thrust upon him.

A much desired outcome of education is the development of people who can think deliberately and systematically. Good questioning procedure can help to develop the habits of thinking twice before speaking, of restraining one's self when in doubt, of considering alternate possibilities, and many others. It should also aid in keeping the pupil from succumbing to emotion, prejudice, and sophistry. Skillful questioning on the part of the teacher is undoubtedly of assistance in attaining these desired outcomes.

Thought Questions and Quiz Questions.—Reflective thinking is demanded by thought questions, which also result in various other phases of mental activity. They are of great value in the development of problem-solving ability. Thought questions may be considered as being divided into two classes:

1. Those necessitating recall, and in addition some mental task or reaction with respect to the material recalled
2. Those in which the large part of necessary facts are furnished the student and in answering which the task involved is very little recall but largely reaction

There are many types of questions that may be used in teaching and in measuring learning. A large number of these types should be included in the repertoire of the teacher who aspires to be a successful director of educative mental activity.

Below are given the most commonly used types of questions with examples of each:[1]

1. *Selective recall, basis given:*
   Name the presidents of the United States who had been in military life before their election.
2. *Evaluating recall, basis given:*
   Which do you consider the three most important American inventions in the nineteenth century, from the standpoint of the expansion and growth of transportation?
3. *Comparison of two things, on a single designated basis:*
   Compare England and Russia with respect to social equality.
4. *Comparison of two things, in general:*
   Contrast the "New Deal" with laissez faire philosophies of government.

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[1] See Walter S. Monroe and Ralph E. Carter, *The Question in Teaching*, University of Illinois Bulletin No. 28.

5. *Decision, for or against:*
   Are you in favor of a world government?
6. *Causes or effects:*
   What were the causes (effects) of the French Revolution?
7. *Explanation:*
   Tell how atomic energy is derived.
8. *Statement of relationships:*
   In what ways are education and economic prosperity interrelated?
9. *Illustrations or examples (the pupil's own) of principles in science, construction in language, etc.:*
   Give one example of the application of Boyle's Law to a practical situation.
10. *Classification* (usually the converse of No. 9):
    What is the principle involved in the gears of an automobile?
11. *Application of rules and principles in new situations:*
    Tell how the concept of evolution applies to social progress.
12. *Statement of aim:*
    What do you think was the author's purpose in his selection and organization of these paragraphs?
13. *Criticism* (the adequacy, correctness, or relevancy of a printed statement, or a classmate's answer to a question on the lesson):
    Comment on the statement in the textbook relative to the uses of atomic energy.
14. *Reorganization of facts* (the student is asked for reports in which facts from different sources are arranged on an entirely new basis):
    Draw a parallel between World War I and World War II.
15. *Formulation of new questions* (problems and questions raised by the student):
    What questions would you want to have discussed as the result of reading the assigned chapter?
16. *New methods of procedure:*
    Suggest a plan for bringing about world peace.
    How would you change the plot in the play in order to produce a different effect?
17. *Analysis:*
    What are the most important characteristics of an economic depression?

The use of the question in oral quizzes in class has its purposes, but it does not adapt itself to reflective thinking. It is not possible to ask questions requiring exceedingly careful reflection or very intricate responses, since the pupil cannot or will not be given sufficient time. However, it is possible to emphasize important parts of the material, to direct attention to phases which might otherwise be overlooked, and to motivate the pupil to careful study. This type of question has a definite place in the teaching procedure.

2. Good Procedure in Questioning

Fundamental Principles.—A basic consideration in respect to what constitutes a good question is the extent to which it is adapted to the aims and purposes of the subject matter being developed. Teachers are inclined to ask trivial and insignificant questions because they are definite, while the big and vital problems seem to escape them. Some considerations relative to good questioning are:

1. *The wording of the question should be clear.* In order to avoid the use of questions which may be involved and confusing, the teacher should formulate in advance a number of questions which are clear. Brevity and directness are qualities of a good question. If the questions asked are involved or confusing, the teacher should reword them and give the pupils such assistance as will help them to understand all the conditions of the question.

2. *The question should be adapted to the age and maturity of the pupils, and to their previous training in the subject before them.* The abilities of pupils vary greatly not only between the first and last years of high school but also within a class. Teachers should be careful in their estimates of the capacities of students and should so word their questions that the class may be expected to grasp their full significance.

3. *The question should definitely describe the task of the respondent.* Questions which do not clearly define the problem should be avoided. Among the most common offenders are the "what about" questions, e.g., "What about the tariff laws?" In such a question as "What caused the United States to enter World War II in 1941?" confusion arises as to whether the task is to tell why the United States entered or to tell why it entered at that particular time. Omission of the date, which is the confusing item in this question, would be helpful.

4. *Questions should conform to the immediate purpose of the instructor.* The wording of the question will vary depending on whether it is to be used to stimulate discussion, to provoke opinion, to test for facts, or to help establish a frame of mind receptive to other points. "Yes or no" questions are useful as a means of ap-

proach, but are undesirable as a means of testing because of the probability of successful guessing.

5. *Questions should avoid the wording and organization of the textbook.* Those which are in the words of the teacher or of the pupil will stimulate independence of thought and study and not place a premium on memorization of facts and the possible repetition of phrases that are not understood.

6. *Questions involving thought and organization are a superior type.* For rapid memory drill questions requiring merely recall may be employed. Otherwise, it is preferable to use those which in addition call for evaluation, organization, or thought comparison.

Specific Techniques.—Specific techniques which should help a teacher to develop effectiveness in questioning are as follows:

(a) Questions should be fairly well distributed among the different members of the class over a fairly large unit of time—a week or so. Assigning a disproportionate number of questions to the slow will tend to hamper the progress of instruction, while a disproportionate assignment to the brighter pupils will encourage the delinquency of the slow.

(b) No special order should be observed in the distribution of questions. Such a practice encourages pupils to prepare only part of the assignment when it is possible to determine fairly accurately in advance the portion to be assigned.

(c) The individual who is to respond to the question should be designated after the question has been asked and time has been allowed for formulating the answer. This technique will encourage more pupils to think through the answer.

(d) The rate of questioning should be adjusted to the nature and purpose of the questioning and the relative familiarity of the class with the material covered in the question. Drill questions may be asked rapidly, but with thought-provoking questions sufficient time should be allowed for a carefully considered answer.

(e) Individual differences of ability and individual differences in special knowledges and interests should be taken into consideration in the assignment of questions. By giving the more difficult questions to the abler and the less difficult to the less able, the better students are stimulated to exert themselves, and the poorer pupils have an opportunity for success instead of failure.

(f) Questions should be occasionally assigned to inattentive pupils.

(g) Questions should ordinarily be asked in such a manner as not to suggest the correct answer.

(h) Repetition of a question in most instances is not advisable.

(i) A natural, interested, and conversational tone should be used rather than one which asks or demands in a formal, artificial, schoolroom manner.

(j) Questions should be asked in a manner which indicates confidence in the pupil.

(k) Pivotal questions, which have been thought out in advance, should be employed in the development of the lesson.

(l) Freedom on the part of the teacher from textbook or lesson plan will enable him to ask questions in a natural, conversational manner and to give the class the benefit of his personality and expression.

Integration of Questions.—In planning the lesson the instructor should first visualize a few outstanding points or aims of the day's work. Questions should then be so organized as to make the development of the lesson contribute to those aims. Short questions lacking general purpose and unity are useful only as a testing device and frequently fail to serve even this purpose. Questioning should be such as to bring out the organization of the material and give emphasis and perspective. It is the task of the teacher to unify and integrate knowledge and thinking.

Socratic Question Procedures.—The Socratic method of questioning is a valuable means for compelling a student to do his own thinking. This technique was named after Socrates, the Greek philosopher, because of its resemblance to his method of teaching by leading people to think through to the desired conclusion. The procedure consists of asking such questions as will cause the pupil to think, in succession, the thoughts which will lead to the desired conclusion, or lead the pupil to see the absurdity of a conclusion he has already reached. It is a time-consuming device and cannot be used as frequently as may be desired. Below is a brief example of the use of this method:

Teacher: Which is the correct form in the following: It is I who (is, am) to blame.
Pupil: I am not sure.
Teacher: How do you determine the correct form to use?
Pupil: A verb agrees with its subject in person and number.
Teacher: What is the subject?
Pupil: "Who."
Teacher: What part of speech is "who"?
Pupil: "Who" is a pronoun.
Teacher: What determines the number and person of a pronoun?

Pupil: It agrees with its antecedent.
Teacher: What is the antecedent of "who"?
Pupil: "I."
Teacher: What is the person and number of "I"?
Pupil: "I" is first person, singular number.
Teacher: What will be the person and number of "who"?
Pupil: It will be first person, singular number.
Teacher: Which verb is first person, singular number, "is" or "am"?
Pupil: "Am."
Teacher: Should you say "It is I who is to blame" or "It is I who am to blame"?
Pupil: I see—"who am."

3. STUDENTS' ANSWERS AND STUDENTS' QUESTIONS

Handling of Answers.—The following suggestions for the handling of answers have grown out of much observation of successful teaching.

The amount and nature of commendation or disapproval by the teacher should be determined by the probable nature of the response and the effect upon the class as a whole and upon the individual. Encouragement and approval are necessary to some individuals but spoil others. Frank criticism stimulates some, while such a procedure discourages or antagonizes others. When in doubt, the best policy is to say nothing or to give a dignified word of approval or disapproval. Effusive approval is likely to excite disgust or contempt; excessive disapproval, to create impatience or discouragement.

Repetition of answers by teachers should be avoided except in rare cases in which for emphasis it is desirable to repeat the answer. The habit of repeating answers serves to waste time and add formality to the classroom discussion. However, answers should be heard, and compelling students to recite more distinctly may result in waste of time and irritation. Incorrect answers should frequently be modified by the instructor.

Circumstances must determine the employment of "advance" assent or disapproval. Advance encouragement can be used if the pupil is timid, or if the material is new and difficult. When the question is being used for testing purposes, care must be taken not to give the pupil clues to the correct answers.

Answers should be in good English and in complete thought units. Since good English is largely a matter of training and habit, the cooperation of all teachers in this matter is desirable.

Responses of some length should be encouraged, although the long topical recitation cannot be made the uniform procedure.

The recitation procedure characterized by a hand-waving contest should be discouraged. Courtesy, fair play, and reasonable dignity must be preserved, even in the most enthusiastic class.

The habits of deliberate thinking, suspended judgment, and self-criticism should be encouraged and insisted upon by discouraging answers which do not represent the student's best and which are not the result of careful thought.

Questions from Pupils.—Students should be given every encouragement to participate in classwork through sincere questions. Teachers should try to keep alive in all grades of junior high and high school that questioning tendency of pupils which is so prominent in their earlier years. As they grow older, students should be trained to find answers to their questions by reflective thinking or by consulting source books, thus developing more independence of teachers, other pupils, relatives, and friends.

Following are suggestions which should be of service in stimulating and handling questions by members of the class:

1. All sincere questions by any member of the class should be treated with appropriate consideration.
2. Determine the importance of considering the pupil's question and the time to be given to it by the value of the question and the percentage of the class that will profit by discussion of it.
3. Not every question should be answered. Stimulate the questioner to some effort on his own behalf and refer questions to others in the class in a manner which will not reflect on the questioner.
4. Students should be dealt with on a basis of logic and reason in situations where they question authority, and patience must be exercised.
5. The formulation of questions as an exercise should be used sparingly and is not necessary when spontaneous questioning already exists.
6. In those situations where opinions differ, the student should not be deprived of the privilege of stating his own opinion. Even if he is apparently wrong, care should be taken not to antagonize or discourage him unduly by "strong-arm" methods.
7. Care should be taken to be courteous and tactful in refusing to answer questions which are irrelevant.
8. The suggestion that the questioner consult references for his answer should be made occasionally. However, consideration should be given to the possibility that the questioner will forget to do so.

A problem which is puzzling to beginning teachers is what to do when asked a question the answer to which the instructor does not know. Nothing but loss of student respect is to be gained by bluffing. The instructor may ignore the question if it is irrelevant, assign it to the class or to some individual for investigation, or state frankly that he does not know with certainty, but that he will find the facts in the case and tell the class later.

Such a situation should not be permitted to confuse or irritate. No one knows everything, and a student attitude may characterize teacher and pupil alike. Instances in which the instructor is unable to answer questions covering essentials or important details of the work at hand, or outstanding points in that field of knowledge, should rarely occur. If the previous training has been somewhat incomplete or partially forgotten, very careful daily preparation should regularly be made.

4. Problems and Motivation

Problem Teaching Versus the Arbitrary Approach.—Despite many changes and developments, the curriculum which is presented to the high school pupil is largely arbitrary and has been determined without much reference to felt need on the part of the pupils themselves. Subject matter is organized into logical compartments and taught to pupils who have never experienced the problems which the subject matter is designed to solve.

Two theories as to the educative process are in conflict. On one side are those who believe that the best preparation for adult life that the school can give is to teach the pupil to meet most effectively the problems of his life as he will live it. On the other is a steadily diminishing number of students of educational theory who have claimed that the attitude of the learner is of little importance. They contend, in fact, that the real value of the subject matter—the disciplinary values—are best served if the child applies himself without any direct interest or incentive or the feeling of any specific need.

There are still others who deny that school should have as its aim training for adult life. Their contention is that child life in itself is worth while and that no period of life should be sacrificed for any other period. School practice will probably be a compromise of all these theories. Childhood and youth are without question periods in which preparation for later life must be made, and consequently the youth must be prepared to solve the problems of life as he will encounter them, regardless of whether or not he can, in the stages of his immaturity, always realize or feel such needs.

Modern methods now have a strong and growing tendency to reorganize both content and methods of instruction on the basis of units presenting psychological challenges, called variously challenges, contracts, problems, projects, and life-units. Goals toward which the student should work are furnished by the solution of the problems involved as well as by the standard of attainment or success. In assignments of the nature of problems, more of the planning and oversight of the work is left to the learner and his fellow learners in the group. They constitute attempts to produce learning situations in which the efforts of the pupils are stimulated by a felt need, difficulty, or desire, rather than by the arbitrary assignment of tasks by the teacher.

The problem as a unit of educational activity is probably the best adapted of all teaching situations to arouse genuine interest and purposeful, wholehearted activity on the part of the pupil. The traditional arbitrary procedure lacks the values and points of strength which appear when study of educational materials and participation in educational activity are the logical and self-chosen procedures for solving problems which present themselves to the learner.

Problems as the Origin of and Guide to Thinking.—John Dewey,[2] more than thirty years ago, called our attention to the fact that thinking originates in some problematical situation. After a detailed discussion of the point, he continues:

> We may recapitulate by saying that the origin of thinking is some perplexity, confusion, or doubt. Thinking is not a case of spontaneous combustion; it does not occur just on "general principles." There is something specific which occasions and evokes it. General appeals to a child (or to a grown-up) to think, irrespective of the existence in his experience of some difficulty that troubles him and disturbs his equilibrium, are as futile as advice to lift himself by his bootstraps.

Dissatisfaction with things causes one to start thinking about them in an attempt to find a solution. The starting point of thinking is the recognition of an unsatisfactory state of affairs, the unpleasantness of things as they are, or of desires and how they may be attained. There are enough situations demanding adjustment, for which instructive tendencies and habits have no ready-made solution, to occupy us in all our waking moments.

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[2] In *How We Think*, p. 13. Quoted by permission of D. C. Heath and Company, publishers.

Problems are always present: problems of health, of finance, of occupational life, of how to win social approval, of how to avoid disapproval and loss of good opinion, frustration of desire for self-expression and power, and problems of sex relationships. When experience breaks down, when that which has been permitted to pass as satisfactory no longer suffices, then reflective thinking takes place. Problem-solving teaching may be said to consist in raising perplexity, confusion, or doubt in the minds of pupils in such a manner as to challenge solution and then supervising their efforts at solution.

5. Types of and Use of Problems

Courses Made Up of Unit Problems.—Problems are very successfully incorporated into the *unit,* which is the organization of the course around meaningful experience or a point of purposeful activity. The problems set up are each attacked in turn by the pupils. It is necessary to have a large variety of reference books available to students, who may need some initial training in the use of them. Class time may be spent in reading the references, in individual and group laboratory experiences, and in class discussions of a non-recitation nature. Pupil reports, teacher lectures, demonstrations, and exhibits may be employed as summaries when the problems are solved. Classes taught by this method are characterized by the objective attitude of the pupils, motivated by the problematic situations created, and the skill exercised by the instructor in stimulating, feeding, and maintaining a state of intriguing perplexity and doubt.

Problems in the Class Hour.—A few puzzling questions planned in advance of the class hour and skillfully employed serve to engage the interest and efforts of the class and to stimulate them to employ the chief facts of the day's work in their discussion. Some of the most effective teaching the writer has ever witnessed has been that which was in the nature of problem-solving and which employed the technique mentioned above. Enthusiasm, eagerness to contribute, interest in discussion, and fruitful thinking were evidenced by pupils engaged in attacking a problem raised during the class hour. In fact, in many instances they became hard to control; several wished to speak at once, and occasionally did so. The formal quiz over the assigned work was not employed, and the deadening testing of memory was not visible as such.

When problems are used, they should frequently be solved in class. Some are left as a basis for assignment, and others by their very nature cannot be settled definitely. One successful science teacher often started the day's class period with short demonstrations which were "puzzlers." The solution of the problems raised by these "puzzlers" usually led to other problems—in the hands of a skillful teacher this will often be the case—the total of which covered the essentials of the work for the day.

The teacher can keep the class in a problem-solving state of mind even in telling or lecturing. The skillful raising of questions helps to maintain an attitude of question and curiosity on the part of learners which goes far to insure that what is being said will be listened to with interest and attention.

6. STEPS IN DEDUCTIVE TYPES OF PROBLEM SOLVING

Two General Types of Problem Procedure.—Several ways to overcome an obstacle and find a solution are always possible when one is confronted with a problem in life. Two general types of procedure are possible, if one bars the possibility of avoiding it completely and bars also the chance trial-and-error method. If the difficulty is a specific one which calls for the application of general laws, definitions, rules, or some form or combination of generalizations, the mental procedure is of the *deductive type.* The procedure is *inductive* if the problem is to determine, discover, or derive a general law, formula, definition, rule, or other generalization, or to develop a concept.

These two types of thinking were used as a basis for entirely different or even opposed methods of thinking in many of the earlier books on general teaching method. The distinct impression was given that entirely separate teaching procedures, designated as deductive and inductive, should be employed. Attention is now directed more toward points of similarity and less toward the points of difference between the two.

The actual procedure is much the same whether the problem is of the deductive or inductive type. The chief points of difference lie in the nature of the outcomes of the thinking and in the nature of the data upon which the conclusion is based. The former are in one case particular facts and in the other generalizations. The latter is either the generalization from which the particular fact desired is deduced or the particular facts from which the generalization is made.

A problem may be regarded as the task which confronts us in finding a way out when our needs and desires and our adjustment to our environment are not taken care of by such automatic means as habits and reflexes. Attacking a problem may consist in the inductive quest for a generalization, a rule, a law, or a definition from particular instances. Or it may consist in the deductive settling of the specific question raised and the working out of some satisfactory explanation by the application of accepted general principles. Generalizations are not only acquired through problem-solving procedures but are also learned from such authoritative sources as books, lectures, and illustrative material. Generalizations most permanently remembered are usually not formed within a few days or weeks but, more often than not, are acquired incidentally over a long period of time.

Furthermore, these general ideas and concepts will continue to be refined from time to time as more related particular instances are experienced. It can hardly be said that this is a problem-solving procedure. But when a teacher and a class start out definitely to develop a generalization—a formula in physics, a rule in algebra, or a definition in grammar—they are attacking a specific problem. Their objective may be to discover what makes a doorbell ring, to find a rule for writing the square of the sum of two quantities, to determine what constitutes a clause, to discover what are the common causes of strikes or of depressions. Their procedure is much more similar to than different from that employed in solving problems deductively.

Getting and Keeping the Problem Clearly in Mind.—Regardless of which procedure is to be used, the first step is clearly·defining and visualizing the problem or problems. The problem must be clearly understood by the pupils and must be kept in mind throughout the effort at solution.

Keeping objectives in sight and thinking of them clearly is important training as a preparation for the thinking of later life. Adults, in discussions and in other activities, quite commonly lose sight of their aims, or conceive them but vaguely. Evidence of this fact can readily be seen in the digressions from the solution of problems before committees or other groups of individuals.

Searching for Data Which Contribute to the Deductive Solution of the Problem.—The data required in deductive procedure are facts, usually generalizations, which will lead to the solution of the problem. The English student must determine whether the correct form is "It is I who am president" or "It is I who is president." In geometry, the pupil must select the theorem which will aid in solving the problem. In a foreign language, it is often necessary to decide what rule governs the case of a noun. The solutions of these and hundreds of similar problem situations which constitute the bulk of school work necessitate a search for pertinent data, rules which will apply, generalizations which will explain, or other information which will throw light on the problem.

After the problem and its conditions are understood, the teacher must stimulate the individuals of the class to search for possible solutions. This may be done by well-chosen hints and suggestions, by citing references or other sources, and by directing the discussion along lines which seem likely to stimulate the pupil to think of pertinent data. Students must be assisted in analyzing situations, formulating definite hypotheses, and recalling general ideas from which solutions may possibly be deduced.

The best criterion to use in deciding how much suggestion and help should be given the student is: Give just as much help, and no more, as will enable the student, with reasonable effort on his part, to arrive at the solution in the time that is allotted for it.

Arriving at Tentative Solutions.—After the pupil has gathered all the data which seem pertinent to the problem, it is necessary to make a tentative formulation of possible deductions. The student should be taught to be patient, to withhold final judgment, and to formulate tentative solutions, but to regard them only as tentative. This is an invaluable service which teachers can render to young people, not only because of its bearing upon the pupils' progress in school subjects, but because of the value of such training in all the affairs of life—in the home, in business, on the street, at the polls, and almost everywhere.

Verifying the Tentative Solution.—After the student has made a critical evaluation of his tentative hypotheses and formulated his deduction, it is necessary to check or verify each conclusion. There are two ways in which this may be done:

1. It may be checked by the examination of further data and other hypotheses.
2. It may be verified by assuming it to be correct, and comparing the logical necessary consequences of the conclusion with what is known to be actually true.

The true scientist never closes his mind on any point. He is always willing to consider more cases and to compare any of his generalizations with known facts.

Formulating the Solution.—Conclusions to all important problems raised should be put into statements which are concise and accurate. The values of such a procedure are clear understanding and agreement by pupils and assistance to more accurate retention because of some form which makes it possible to commit the conclusions to memory. In deductive problems, formulation of conclusions in exact words is prerequisite to a complete understanding of the conclusion.

7. STEPS IN INDUCTIVE PROBLEM SOLVING

Getting the Problem in Mind.—As was stated previously, the inductive procedure is the discovery or derivation of a general law or rule. The first step, as in deductive problems, is to get and keep the problem and its conditions clearly in mind.

Searching for Relevant Cases.—When pupils have a clear and adequate view of the problem, the next step is searching for data to assist in its solution. It is necessary to secure for examination a sufficient number of representative cases from which a tentative generalization can be made. The number of cases necessary depends upon their representativeness and varies with the problem which is to be solved.

In order to know how well high school sophomores should do in geometry, one should have test results from a number of schools in various parts of the country and from schools of a variety of types. The number of cases necessary to teach a class inductively the Pythagorean theorem, that the square on the hypotenuse of a right triangle is equal to the sum of the squares of the other two sides, would vary. It is not necessary to present formally all the data from which generalizations will be drawn. Previous experiences of pupils furnish much data for the solution of present problems.

That one cannot state the number of cases which should be examined before forming a tentative generalization is obvious. However, it is well to remember that forming generalizations from an insufficient number of cases is a very popular way of jumping at conclusions.

Searching for Generalizations.—In the development of laws, rules, principles, or definitions, the procedure must be so manipulated by the instructor that the essentials will be prominent enough that the pupil will not fail to notice them. The natural and incidental accumulation of knowledge, habits, skills, ideals, and attitudes should be expedited and speeded up by the school as an institution. The natural and incidental method is too long-drawn-out and too complicated for the school to follow. While economy of time and effort should be effected, the situation must not be so simple that all opportunity for the student to extend and apply himself is removed. The data leading to general conclusions must be brought to the attention of the pupil and so organized as to permit him to abstract the essentials bearing upon the problem at hand.

One also must be on one's guard against the temptation to generalize too quickly and too definitely. Pupils should be taught to maintain an attitude of open-mindedness and suspended judgment and to note carefully possible hypotheses. At the same time they should continue to seek and examine data and be ready to modify or discard one hypothesis in favor of another in the light of more complete data. Quite often the final generalization resulting from continued study is full of refinements and exceptions as compared with the original conclusion.

In the social sciences, such as economics and sociology, and in psychology as well, there are comparatively few well-defined laws or rules that may be learned, but there are countless generalizations, tendencies, near-laws, and concepts which are very valuable to those who acquire them. Much careful thought and study of the data of these subjects are necessary before they can be mastered. They are replete too, with exceptions and modifications.

Verifying Tentative Solutions.—As has been pointed out in regard to the deductive procedure, patience, withholding of final judgment, and a tendency to regard generalizations as only tentative must be taught to the student. A critical viewpoint toward all suggested conclusions should be adhered to.

Checking and verifying of conclusions are essentially the same in either the deductive or inductive process. Two ways in which this can be accomplished were given in the discussion of the deductive process. An apt illustration of the way in which each of these methods of verification might be used in testing out the generalization that heredity is not an important factor in determining individual traits in human beings was given by the late Samuel Chester Parker. He employed as an illustration a debate in which the question under discussion was the relative influence of environment and heredity.

Both methods could be applied to verify the fact of the importance and influence of the factor of inheritance. It could be claimed that heredity is not an important factor because of a particular case in which it was apparent that a son's traits could not have been derived from his parents. Attempts to verify this statement might involve getting further evidence about it—further family history which might show, for example, that the son was like his grandfather, thus establishing the influence of heredity.

The other method of verification might start from the following statement: "If heredity or original nature is a very powerful factor, we may infer that similar children who are brought up under identical circumstances ought to remain similar, and different (dissimilar) children who are brought up under identical circumstances ought to remain different (dissimilar)." The verification would consist in finding cases and noting the actual results, as Sir Francis Galton did in England in the case of similar twins brought up under different circumstances and dissimilar twins brought up under similar circumstances. The evidence was strongly in favor of the influence of heredity: the similar twins brought up differently remained similar, and the dissimilar twins brought up with similar training remained dissimilar.

Concise and accurate statements should be made of all conclusions to important problems. Advantages and limitations of this procedure have already been discussed under the deductive procedure.

8. SUMMARY OF PROCEDURES

A summary of the more important processes in problem solving is given below:[3]

INDUCTIVE	DEDUCTIVE
(Development of generalizations—concepts, rules, or principles from examples, etc.)	(Solution of perplexing difficulties by inferring from previously developed facts—causes, effects, consequences, etc.)
1. Getting and keeping the problem and its conditions clearly in mind	1. Getting and keeping the problem and its conditions clearly in mind
2. Recalling, locating, and examining instances or cases	2. Recalling known rules or generalizations from which the solution may be deduced or by means of which the problem may be solved

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[3] From *Modern Methods in High School Teaching*, by Harl R. Douglass, Boston: Houghton Mifflin Co., p. 319.

3. Tentative formulation of possible generalizations	3. Tentative formulation of possible deductions from the generalization or generalizations to the solution of the problem
4. Critical evaluation of tentative generalizations	4. Critical evaluation of tentative deductions
5. Formulation of generalization	5. Formulation of deduction
6. Check or verification of conclusions	6. Check or verification of conclusions

In order to effect economy of student effort and to produce effectiveness in problem solving, the teacher must facilitate the steps in problem solving with considerable skill. Important services can be rendered by adopting the following suggestions: [4]

1. Assist the pupil or class to encounter suitable and worthy problems.
2. Assist the class to formulate problems clearly, and in such a way as to be of suitable difficulty.
3. Assist pupils to keep problems and conditions of each problem in mind and prevent digression.
4. Assist pupils to find or recall data which will contribute to the solution of the problem, offering hints, suggestions, and references but being careful to give no more assistance than is necessary and thereby to avoid depriving the pupil of any educational opportunity.
5. Train pupils to evaluate carefully for themselves each suggested conclusion and to maintain an attitude of suspended final judgment.
6. Train pupils to be systematic in the consideration of hypotheses and their evaluation, to follow some order, and to complete the consideration of one before digressing to another.
7. Assist pupils to formulate their conclusions for themselves.
8. Train pupils to make final check and verification.
9. Provide for the fixing of solutions in mind by drill, application, memory work, or exercises.

Questions, Problems, and Exercises

1. Make a list of ten faults in questioning.
2. Rank the functions of questioning in the order of their importance. Which functions are most neglected in present-day practice?

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[4] From *Modern Methods in High School Teaching,* by Harl R. Douglass, Boston: Houghton Mifflin Co., pp. 319-320.

3. Write questions illustrating ten different types of thought questions.
4. Think of two suggestions on the technique of questioning, in addition to those given in the section headed "Good Procedure in Questioning."
5. What are the advantages and shortcomings of Socratic questioning, as you see them?
6. Write examples of five of the suggestions given on handling student answers.
7. List the more important relative advantages and disadvantages of the authoritative and developmental methods.
8. Formulate three problems in a high school subject which interests you and state how the work of a class might center around these problems for several days or more.
9. Formulate a deductive and an inductive problem in your chosen subject and show what procedure would normally be used in each of the steps involved in the solution of each problem.
10. Suggest a list of from six to eight potential dangers in the technique of employing a problem-solving type of teaching.
11. Write an assignment composed of several problems in your chosen high school subject.
12. What are some kinds of mistakes made by people in every-day thinking? How may students in school be trained to avoid these errors?

Chapter 15

SELECTING AND ORGANIZING LEARNING MATERIALS

1. Who Should Construct the Course of Study?

The character of the curriculum is largely determined by the teacher. The manner in which teacher control is exercised varies considerably from school to school. In some situations, the whole curriculum is a teacher product, constructed cooperatively. In his capacity as an official member of the curriculum committee, the teacher assists in determining the scope of the curriculum for the entire school, or he may participate in the preparation of source units and other suggestive instructional materials within a given area of the curriculum. In other schools, the curriculum is largely predetermined by state legislative enactments, state department of education requirements, or local school administrative and supervisory regulations. Governmental agencies usually indicate the broad outlines of the curriculum in terms of subjects, grade placement, and time allotment. They also attempt to implement these requirements by means of written courses of study.

A course of study is the teacher's guide in using the curriculum. It contains suggestive objectives, content, teaching procedures, and methods of evaluating pupil achievement within a particular area of the curriculum. It may be either mimeographed or in printed form. Whether the course of study is teacher-inspired or dictated by outside agencies, the classroom teacher is its final arbiter. In the last analysis it is dependent upon the emphasis placed on various items of content and manner of presentation by the teacher. Even when the course of study was regarded as the "directions and specifications" having the force of law in respect to required subjects, grade placement, sequence of topics, and time allotment, the qualitative aspects of the curriculum were in the hands of the teacher.

The modern concept of the suggestive function of the course of study, however, places a much greater premium upon the teacher's initiative and resourcefulness. Regardless of its origin or degree of completeness, the official course of study can merely indicate general guiding principles. Source units can do little more. They are designed to serve as blueprints, subject to modification by individual teachers. Their use with different classes requires many alterations and much supplementation. Many important decisions in regard to details must be made by the teacher. Valuable as the official guides may be, adaptions and refinements must be made in terms of the students involved. These changes are so far-reaching in scope and significance that the resulting product is sometimes referred to, not as a course of study, but rather as a *course of instruction.*

Teachers Should Make Courses of Study.—In this chapter we are not concerned with the teacher as a member of an official curriculum committee, but rather as the designer of courses of study for his own teaching. Among the reasons for adapting the official course of study to meet the requirements of particular classes are:

1. The curriculum assumes its truly dynamic character through the constant adaptation of the course of study by the individual teacher. Official curriculum committees may produce courses of study at given intervals. The day-by-day adjustment made by the teacher is the factor that makes the curriculum program continuous.
2. Most courses of study are prepared in terms of the student of average ability. Hence, modifications are necessary to provide for the needs of the slow-learning and superior students.
3. It is necessary to enrich the course of study by the inclusion of curricular materials designed to serve the special interests and needs of each student.
4. More appropriate and timely approaches to the teaching of a topic than those suggested by the course of study may frequently be made. For example, a strike of workers may be used as the point of departure for the study of labor-management problems.
5. To modify the suggested time allotment may be desirable because of the differences in the experiential background of various classes.
6. Suggested learning activities may need to be modified because of available facilities, such as building space and equipment.
7. The suggested organization of instructional materials may be adjusted in terms of available library materials. For example, the effective use of the unit plan is dependent upon the availability of a wide variety of books and other supplementary reading materials.

In the absence of an official course of study or source units, the foregoing list of considerations are equally applicable to course of study construction by the individual teacher.

2. CONCEPTS ESSENTIAL TO COURSE OF STUDY CONSTRUCTION

Whether a teacher prepares a course of study in advance or develops it as the teaching proceeds, he should have three concepts clearly in mind, namely *the nature and development of the curriculum, the relation of the course of study to the curriculum,* and *the relation of the general (official) course of study to that prepared by the teacher for use in a particular course.*

The Nature and Development of the Curriculum.—The curriculum is as broad and varied as the child's school environment. Broadly conceived, the curriculum embraces not only subject matter but also various aspects of the physical and social environment. The school brings the child with his impelling flow of experiences into an environment consisting of school facilities, subject matter, other children, and teachers. *The interaction of the child with these elements constitutes learning.* Not only is the learner an ever-changing personality resulting from a continuous series of new experiences, but the constituent elements of his environment are constantly evolving and unfolding. The interactions between the two factors which comprise the learning situation, therefore, are manifold and varied. The inherent character of the learner and the environment give learning its dynamic quality.

The one element in the situation that has been considered static is the subject matter. It also has been the one foreign element in the learning situation. Until recently subject matter was suggested, if not actually imposed, by individuals or agencies outside the high school. These individuals were in most cases subject matter specialists. They assumed that the chief function of the school was to transmit from one generation to another the culture of the race in the form of subject matter. They also believed that the organizing principle for school activities lies within the body of subject matter itself. Many of them accepted the theory of formal discipline and justified the retention of much obsolete material on the ground that these materials were difficult for children to learn and therefore were of value to them in *training their minds.* The chief difficulty, however, arose from the fact that these specialists were unfamiliar with the interests and needs of high school students.

High School Teachers as Curriculum Makers.—In comparison with those of a generation ago, high school teachers are much better qualified to construct high school courses of study to meet the individual and social needs of their students. The opportunities of classroom teachers to obtain first-hand, pertinent knowledge of the abilities, interests, and needs of adolescents place them in a strategic position to build a high school curriculum. The one problem in regard to curriculum-making by teachers which has not been solved satisfactorily is the matter of providing sufficient time in the daily schedules for teacher participation.

The objectives of a general curriculum revision program in which the teacher participates are *to provide better experiences for children* and *to promote growth of teachers in service.* The teacher does not have to await the arrival of an elaborate curriculum revision program in his school to make revisions in his own courses. If the program of revision suggested in this chapter appears too ambitious for the individual teacher to undertake, it should be remembered that the suggestions mainly involve adaptation and enrichment of the official course of study in a systematic manner.

Relation of the Course of Study to the Curriculum.—The terms *course of study* and *curriculum* are often regarded as synonymous. This confusion has resulted from failure to recognize their respective purposes and scopes. The curriculum consists of all the features of the school environment to which the student reacts. The course of study is the instrument designed to guide the teacher in selecting and arranging the elements of the curriculum so that the student's experiences with various aspects of the school environment will result in desirable learning. The curriculum is the means utilized to attain the objectives of education. The course of study is intended to assist the teacher in the effective use of the curriculum to achieve the desired outcomes of education. Their functional relationship can be indicated by a consideration of the purposes of a course of study. Among the most important purposes are:[1]

To provide teachers with aims and objectives of education in general and in every subject

To provide a guide as to local resources and approaches and as to content and pupil activities in order to realize the aims and objectives

To indicate methods and procedures, and proofs of their success

To set up standards of attainment

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[1] *Keeping Pace with the Advancing Curriculum,* Research Bulletin of the National Education Association, Vol. III, Nos. 4 and 5, p. 179.

To orient the course in relation to instructional materials of other grade levels

To coordinate the efforts of the school system

The Relation of the Official Course to That Made by the Teacher.—The official course of study and that designed by the teacher for use in a particular course differ in several important respects. The main differences may be summarized as follows:

	OFFICIAL COURSE OF STUDY	TEACHER-ADAPTED COURSE
Purpose	To serve as a general guide for a typical teacher in a typical situation	To serve as a specific guide in teaching a particular class in a particular situation
Origin	Teacher committee or outside authority	Adapted from official course of study by individual teacher
Educational Aims	General aims of subject outlined	Specific aims of course listed in terms of needs of students involved
Content	Suggested content of considerable variety and scope	Content selected in terms of abilities, maturity, and previous experiences of students to attain specific objectives of the course
Methods	Variety of teaching procedures suggested which are suitable for typical students	Teaching procedures based upon teacher's knowledge of students in class and relative degree of success experienced with alternative procedures
Time Allotment	In terms of average student and relative values of many elements	In terms of individual students and relative values of a selected list of topics
Evaluation	Suggested evaluation in terms of general objectives of course	Evaluation of specific outcomes sought for a particular group of students

3. MAKING THE COURSE OF STUDY

Course of study construction involves numerous important decisions. Judgments are required in regard to the most urgent needs of students, and the relative values of different learning activities and materials in meeting these needs. Decisions on the inclusion or omission of certain items of content as well as their optimum time allotment and grade placement demand intelligent discrimination.

The teacher occupies an advantageous position in respect to many of these matters. His close proximity to students in the process of learning, in addition to his familiarity with the subject matter, provides him with invaluable insights into the problems of course of study construction. Many programs of curriculum reconstruction have failed of fruition because of the lack of first-hand knowledge of actual classroom conditions by the participants. Mere proximity to a problem, however, does not insure adequate comprehension of its implication.

In adapting a course of study to meet the needs of a particular group of students, the following steps are suggested.

1. *Obtain pertinent, first-hand information in regard to the students and the social scene of which they are a part.* The most significant types of data are in regard to:

   (a) The students to be taught, with particular reference to their:
      (1) Needs—economic, intellectual, physical, and social
      (2) General experiential background, including the level of school achievement or previous preparation and work experiences
      (3) General intelligence
      (4) General and special interests
      (5) Home conditions
      (6) Community background
      (7) Vocational and future educational ambitions and plans

   (b) The local community with particular reference to its:
      (1) Resources—cultural, educational, recreational, and natural
      (2) Population—characteristics, nationality, etc.
      (3) Attitudes and mores—economic, political and religious
      (4) Adult vocational activities
      (5) Recreational facilities for adults and youth
      (6) Welfare and youth-serving agencies

   (c) The social order, with particular reference to its:
      (1) Characteristics
      (2) Ideals

(3) Deficiencies
(4) Possibilities for improvement
(5) Trends

First-hand information on the subjects listed above should be obtained in advance, or as the teaching proceeds. Data concerning students may be revealed by an examination of school records, testing, interest questionnaires, interviews, and various observational techniques. Active participation in community affairs provides the teacher with the best primary source of knowledge in regard to community life. This may be supplemented by informal surveys of community conditions. A thorough knowledge of the local community, augmented by analyses and studies of the general social order, furnishes a basis for the understanding of the problems of society.

2. *Supplement these primary sources of information about individual and social needs with data from various secondary sources.* Teachers usually do not have sufficient time or facilities at their disposal to acquire at first hand all the data necessary for building a course of study. Hence they have to rely upon secondary sources of information. Some of the readily available sources are:

(a) Scientific educational research on curriculum problems by individuals and educational institutions

(b) Studies of contemporary life by committees of national and regional organizations

These organizations may be either government or private. For example, the reports of the American Youth Commission provide considerable data on the persistent and recurring problems of youth, while the United States census reports contain valuable quantitative data about many aspects of adult life.

(c) Contemporary books and journals

Many of these are excellent sources of information in regard to economic and social trends.

(d) Courses of study from other schools, representing the combined judgment of teachers who have given considerable study to curriculum problems

These courses of study may suggest techniques of obtaining data, as well as instructional materials, which may be adapted for use in a particular school. Too great reliance upon material from other schools should, however, be avoided. Without proper adaptation and modification, the inherent evils of the scissors-and-paste method of course-of-study construction manifest themselves.

(e) The opinions of competent persons on economic, educational, and social problems

The considered judgments of "juries of experts" are usually more valid than the superficial opinions of large numbers of persons who have given little time or thought to the issues involved.

(f) Publications of organizations representing different points of view

For example, a study of the areas of agreement and the points of disagreement between the Harvard report on *General Education in a Free Society* and that of the American Policies Commission entitled *Education for All American Youth* should be fruitful in giving a proper perspective for the construction of courses of study in the modern secondary school.

(g) The suggestions of "frontier thinkers" in different areas of contemporary life

Their ideas may serve to indicate the general direction which programs of secondary education should take.

3. *Consider which educational needs are met by outside agencies and other school courses.* The school is only one of several educational agencies in our society. The needs of youth are so diversified and numerous that no one agency can serve all of them. The various youth-serving agencies supplement and reinforce one another. The school can hardly be expected to assume exclusive responsibility for the total education of youth unless it is given supervision over them for a much larger proportion of their time. Recent extensions of educational services downward and upward, as well as the trend toward a longer school day, week, and year, have increased the opportunities of the school to serve more of the needs of youth.

The assertion is frequently made that the school should limit its activities to the intellectual development of the child. To accept this area of child development as the major responsibility of the school does not change its supplementary character. All aspects of the child's growth are so interrelated that his needs cannot be provided for adequately in any single area to the exclusion of needs in other areas.

There is no disposition on the part of thoughtful teachers to usurp the prerogatives of the home and the church in the important areas of education in which they are peculiarly fitted to serve. The limited resources of the school also make it imperative that the latter confine its activities to those matters which are neglected by other institutions.

In formulating a philosophy of education, and in planning activities in terms of that philosophy, the school should take cognizance of all the agencies, local and national, that contribute to the education of youth. Thus the school will be able to concentrate on those educative experiences for which no provision is made.

In order to delimit properly the scope of a particular course, the teacher should make an inventory of the needs of his students which are not served by outside agencies. Obviously the character and quality of these services will vary from one community to another. In planning a particular course of study, those activities provided for by other courses in school should also be omitted.

4. *On the basis of the distinctive contribution which the course can make to the needs of youth which are not served by other agencies or school*

courses, formulate a set of specific objectives for the course. The inclusion of a course in the curriculum can be justified only to the degree that it contributes to individual and social needs. Both direct and concomitant learnings should be taken into account in appraising the value of a course. In formulating the objectives of the course, those stated in the official course of study should serve as a general guide. However, they must be adapted to the abilities, interests, and needs of a particular class.

5. *Establish the validity of the objectives of the course by relating them to the educational philosophy of the school, as expressed in the official course of study.* The kind of philosophy of education that most influences school practice is one developed cooperatively and democratically by the teachers within the school. In the formulation of an adequate basic philosophy of secondary education, consideration should be given to:

(a) The ideals of the culture out of which the school grows
(b) The role of secondary education in that culture
(c) The characteristics of the local community served by the school
(d) The unique characteristics of the adolescents to be educated
(e) The nature of the learning process
(f) The educational philosophy formulated by teachers in other schools
(g) Concepts of the function and nature of secondary education as formulated by recognized leaders in the fields of education, philosophy, psychology, and sociology, e.g., the theory of experimentation and *Gestalt* psychology

6. *Make an inventory of possible effective activities and learning materials coming within the scope of the course to ascertain the degree to which they contribute to the stated objectives of the course.* Select and arrange these elements on the basis of their value in engendering desirable appreciations, attitudes, habits, ideals, knowledges, and skills.

The General Committee of the Cooperative Study of Secondary School Standards formulated a set of criteria[2] for the evaluation of content in each major field or area. By use of the criteria an effort was made to determine the extent to which provision was made for:

(a) Emphasizing significant contributions of racial culture to present-day life values
(b) Promoting pupils' understanding of present-day society
(c) Stimulating pupils' interests and satisfying their needs
(d) Promoting the spirit and understanding of democracy
(e) Promoting desirable social relationships because of habits, understandings, appreciations, and attitudes developed
(f) Selecting material having potential value in adult life

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[2] Adapted from *Evaluation Criteria,* Cooperative Study of Secondary School Standards, 1938 ed., Washington, p. 23.

(g) Engaging in a wide range of experiences for extending pupils' interests
(h) Making adaptation to the tastes, interests, and abilities of individual pupils
(i) Stimulating continuous growth and improvement of pupils throughout their lives

7. *Consider what modifications are necessary because of limitations of time, equipment, and building facilities.* In some situations, one or more of these factors may impose serious restrictions upon the inclusion of many desirable learning materials and experiences. For example, incorporating outside work experiences in a course may be advisable. However, the number and type of vocations represented in the community may be quite limited. In other schools, the lack of trained personnel to administer and supervise the work experience of students may make the activity of doubtful value. Likewise, the number and variety of field trips in connection with science instruction or school excursions by social studies classes will be limited by the proximity of the school to places of educational interest.

8. *Take into account the requirements of accrediting agencies, colleges, local school authorities, and state law.* At present college entrance requirements can be disregarded in planning the content of courses for the majority of high school students, since most colleges do not go beyond specifying the titles of courses required for entrance. They seldom prescribe content in detail, and therefore the teacher of courses required by colleges has considerable freedom in developing courses of study in terms of the abilities and needs of the students involved. This is also true in regard to state school laws, which only infrequently go beyond establishing the general scope of the curriculum. Except in rare instances state legislatures have not enacted laws requiring specific curricular materials to be included in or omitted from the curriculum.

In most communities, local boards of education have delegated their authority to make courses of study to the superintendent of schools, who in turn has been inclined to accept the combined judgment of teacher curriculum committees. Regional accrediting associations have encouraged courses of study construction by teacher curriculum committees. It is feasible, however, for the individual teacher in making a course of study to familiarize himself with the requirements of these various agencies. Some of their suggestions may be helpful to him in building a well-balanced course of study.

9. *Review the grade placement of activities and learning exercises suggested in the official course of study.* Recommendations of grade placement of materials in courses of study are usually made on the basis of experimentation or the judgments of teachers and experts in regard to the difficulty of the material and the interests of children at different grade levels. The logical arrangement of subject matter has been the deciding factor in allocating many materials of instruction to different grade levels. These recom-

mendations require the careful scrutiny of the teacher in adapting the course to his pupils. Many teachers report that a considerable amount of reading material recommended for certain grade levels is too difficult and does not appeal to the interests of students of those grades. The common learnings needed by all pupils have not been given sufficient consideration in many instances. Content of great social significance for all pupils should be introduced at grade levels early enough so that large numbers of pupils will not have been eliminated.

The teacher should ascertain the mental and social maturity of the students in the class and not forget it when he selects materials. Since the vocabulary used is often the source of students' difficulty in the comprehension of learning exercises, "stepping it down" or "stepping it up" may be necessary.

10. *Organize the content into units of instruction.* The crucial issue in respect to the organization of material is the question as to what constitutes the proper unifying element. In most subject-matter-centered courses of study, the unifying principle lies within the body of subject matter itself. The chronological sequence of topics in a history course illustrates the type of organization which results from the use of this principle. An increasing number of teachers believe that the student's past experiences and present interests provide the proper integrating basis. With these present elements as a beginning point, the learning activities and experiences should flow out to encompass learning materials more remote in time and space. Thus the history of social organizations would evolve from a study of the present social situation, of which the student himself is a part. An analysis and understanding of the current social scene would be the first phase of study of society.

These two approaches represent the extremes of two points of view. There are many degrees of variation between the two extremes. Whichever approach to organization of content is made, sufficient flexibility should be provided to allow for the special interests and needs of students. In any form of organization, a distinction should be made between materials designed to meet the common needs of all pupils and those intended to serve individual needs. Another factor in organizing materials is the advisability of correlating them with materials from other fields. The relative value of the topic, the availability of instructional materials, and the possibilities of leading on into related topics should determine the size of the unit of instruction.

11. *Make a tentative time allotment to each unit on the basis of its relative significance in achieving the objectives of the course.* In making decisions in regard to the optimum time allotment for each phase of a subject, the teacher is confronted with a mass of important material and a very limited amount of time in which to present it. The teacher should therefore recognize the implications of each decision he makes in regard to time allotment. For example, if a teacher of English literature decides to have students devote two weeks rather than three days to the study of one of Shakespeare's plays,

he automatically eliminates from the course a considerable amount of other significant material that otherwise might have been included. The time allotment cannot, however, be made solely on the basis of the content involved. The abilities and experiential backgrounds of the students are of paramount importance in every case where the element of time is involved.

12. *Select from the teaching procedures suggested in the official course of study those which appear to be best adapted to the pupils concerned.* Consideration should be given to the manner in which the factors in the learning process operate in a given situation. Problems of pupil interest, motivation, recognition of the significance of various topics, and emotional factors which influence learning all vary considerably from one group of pupils to another. Teaching procedures should be governed by the principles of effective learning. This can be illustrated by reference to the principles of apperception and self-activity in learning (see pages 58 and 64). A student's reaction to a learning situation is greatly influenced by his past experiences of learning. According to the law of apperception new learning has to be built on previous learning. In other words, teachers must begin with children where they actually are. Their present stock of knowledge, prejudices, and skills may be assets or liabilities, but these are the foundations on which present and future learnings must be built.

Progressive educators may seldom refer to apperception, but many of their practices in curriculum construction and methods are based upon it. In the experience curriculum, for example, the point of departure is the past and present experiences of students. In fact this method of approach represents one of the main differences between the experience and the subject-matter types of curricula, which both utilize subject matter.

Since self-activity is essential in learning, provision should be made for pupils to become active participants in every learning situation. In the acquisition of skills, such as typewriting or the playing of a musical instrument, the need for self-activity is quite obvious. The principle of self-activity, however, is equally applicable to the higher mental processes such as analysis, organization, and reasoning. In most school subjects, many opportunities can be provided for self-expression in the form of discussions, planning study procedures, conversation, drawing, and writing.

13. *Evaluate outcomes in terms of the stated objectives.* Evaluation should be continuous throughout the course, but a summary of the outcomes achieved should be made in the final phases. Measurement provides one basis for evaluation. Until recently measurement was confined to the more tangible outcomes of instruction, such as mastery of factual material. In Chapter 21 of this volume there are descriptions of instruments for measuring some of the other important outcomes, such as ability to apply knowledge, reasoning, etc. For purposes of evaluation, the data obtained from test scores should be supplemented by anecdotal records, examination of written and other original work, and the various observational techniques mentioned in Chapters 20 and 21.

14. *On the basis of the results achieved, make a tentative revision of the course of study.* Notations can be made of needed changes for future reference. The final revision should await the time when the teacher has had the opportunity to know the students in the new class.

The Selection of Instructional Materials.—In the teacher's role as curriculum-maker he is responsible for the selection of instructional materials in the subjects he teaches. In the modern high school, the content of each subject consists of a great variety of learning materials, including textbooks, workbooks, supplementary reading materials, and audio-visual aids. The latter are discussed elsewhere in this volume. Since textbooks, workbooks, and supplementary reading constitute a major portion of most courses, they are discussed in this chapter.

There is considerable variation in the methods of selecting textbooks in different high schools. In several states the textbooks used in many schools are selected by state textbook commissions. In the larger schools of all the states and in all schools in some states, the legal authority for selecting textbooks rests with local school boards. In actual practice these school boards usually delegate their authority to the superintendent and teachers.

The subsequent sections of this chapter are designed to assist teachers who have the responsibility of selecting or making recommendations for the adoption of textbooks, workbooks, and supplementary reading materials in the subjects they teach.

4. The Selection and Use of Textbooks

Dependence upon Textbooks.—It has often been observed that secondary school teachers in this country are characteristically dependent upon textbooks as compared to teachers in secondary schools in the more advanced European countries. Although for many years attempts have been made to emancipate teachers and learners from slavery to textbooks and sterile memory teaching based upon textbooks, many teachers still cling to that relatively ineffective type of teaching.

The reasons for this impractical dependence upon textbooks are not difficult to discover. Until the last two or three decades the great majority of teachers were poorly prepared in subject matter. Elementary school teachers frequently had no training beyond high school, and high school teachers averaged between two and three years of college work. Even today approximately half of the nation's secondary school teachers are very meagerly prepared in the subjects they teach, and some attempt to teach subjects in which they have had no adequate training beyond high school.

Those better prepared than the average are commonly not well prepared in and are not thorough masters of the subject matter at the secondary school level. Many mathematics teachers know calculus better than arithmetic and the applications of algebra. They have learned college material in a set fashion and are not prepared to select and organize courses of study for high school boys and girls of today.

Furthermore, many teachers lack training, ingenuity, and experience in planning learning materials for pupils. High school teachers working a nine-hour day usually have from one to two hours to prepare and plan for the five classes which constitute their teaching load. They have not been trained in college in course of study construction. Of the more than a million teachers in this country, probably not more than half possess much creative and organizing ability for planning learning experiences.

Among the other reasons for excessive dependence upon textbooks are: tradition, the childlike faith of the general public in the recitation of textbook material as evidence of learning, the misuse of standard tests, the backwardness of many school administrators, and the fairly common fallacy of thinking of learning and education as the temporary acquisition of bookish and factual information (*à la* "quiz kid" radio programs) as constituting education.

The unfortunate effects of overdependence upon textbooks are numerous, serious, and easy to see. Most important of all, the reciting of words is considered as the index of understanding. It results in temporary, superficial results instead of permanent mastery. It is a deadening procedure devoid of interest for the great majority of pupils. It robs most high school subjects of their richness and value. It does not result in abilities to apply the subject to a variety of life situations. It does not encourage the teacher constantly to learn more about his subject and to plan better methods of teaching. It encourages verbalism—the learning of words without understanding—and finally it results in concentration upon information and the neglect of ideals, attitudes, interests, concepts, and tastes as objectives of learning.

In addition to these limitations, dependence upon *one* textbook possesses other dangers. The course of study is then limited largely to one author's theory of education and his abilities to devise effective learning materials. The class and the teacher are committed to the author's emphasis, improper or otherwise. They are also dependent upon various divisions or types of material in the subject as well as the author's ideas of the selection and arrangement of materials regardless of the needs, backgrounds, and interest of the pupils of a given class or the needs of a given community.

Textbooks are restricted not only in point of view but also in scope. Because of price limitations they are small, condensed, and hence too often artificial and uninteresting. This is especially unfortunate in history, the sciences, and the social studies, where it is better to assign twenty or thirty pages a day of interesting material than four or five pages of material written in the encyclopedia style. Textbooks are also written so as to be "teachable" by mediocre teachers rather than to exercise the full powers of superior teachers and are hence not of the highest type of learning materials. They are frequently censored, distorted, and incomplete so that they will not offend ignorant or selfish groups of laymen who would prevent their use in the schools. Furthermore, textbooks get out of date in a few years and are commonly used for five to ten years after they should have been discarded.

Values of Textbooks.—Textbooks are not without values. Many teachers would be practically helpless without textbooks, particularly beginning teachers and older ones whose knowledge of the subject is no longer adequate to the needs of modern life. The experienced teacher of good preparation and superior abilities may employ the textbook to advantage along with other aids—readings, lectures, discussions, problems, and visual and auditory aids. This is particularly true if a very superior textbook is employed.

Among the more important values of the textbook the following may be mentioned:

1. It furnishes an outline which the teacher may use in planning the work of the semester or the year.
2. It brings together in one volume a great deal of the more important information in a given field.
3. It usually contains some serviceable teaching aids, such as pictures, charts, diagrams, questions, problems, maps, summaries, outlines, headings, exercises, and table of contents.
4. It serves as a permanent record for future exercises later in the course, e.g., reviews.
5. It saves the teacher much time in presenting material or finding material for students to read in the library.
6. It enables the learner to take home with him in convenient form some of the more important materials for study.

7. It facilitates the making of assignments—though often assignments of inferior grade.
8. It provides a uniformity in the learning materials of pupils which is desirable to some degree, particularly for the purposes of class discussion and testing.
9. It provides a logical organization, though by so doing it deprives the learner of the responsibility for organizing and hence the educational training involved.
10. It relieves the teacher of responsibility for evaluating much of the material of the course; more time is thus made available in class for discussions, explanations, assignments, the use of visual aids, and other activities.
11. It unifies the study of the class around a definite specific topic.
12. It avoids the confusion which may result from the attempts of pupils to organize a mass of facts from various sources.

Using the Textbook.—Many suggestions for the effective use of textbooks may be drawn from the foregoing list of values. Among the more important suggestions are the following:

1. Select the best available textbook. (See later pages for suggestions on selecting textbooks.)
2. Supplement its use by lectures, discussions, collateral readings, and pupil activities of a wide variety.
3. Avoid "recitation" of textual materials. Make assignments which call for understanding, evaluation, criticism, interpretation, application, and supplementation.
4. Teach pupils how to read the textbook critically and understandingly.
5. Teach pupils how to use the various aids included in the textbook, e.g., the table of contents, the index, marginal and other headings, study questions, visual material, etc.
6. Avoid asking pupils to recite details. Instead call for large units, reorganization, applications, and the like.
7. In some classes, particularly in history, an introductory survey or rapid reading of the text is useful, to be followed by a more thorough, slower study of the text and collateral material.
8. Adapt the textbook and other materials to the individual and to the various levels of ability of the class.

There are certain practices in the use of textbooks which should be avoided in classes in history, the sciences, the social studies, and other content subjects. The one-book teacher in these subjects cannot possibly be a superior teacher. By relying exclusively upon one textbook, he is failing to train pupils in the skills of wide reading, comparison, and synthesis of materials from more than one source.

The students will also lack training in library skills and habits and other important educational results which will remain long after most of the textbook content has been forgotten. The citizen of tomorrow must read current materials not only in books but in periodicals and newspapers and must know where to look and how to interpret such materials.

The teacher in the content subjects should avoid overemphasis upon "recitation" of textbook materials. He should instead encourage the organization of material from textbooks and other sources around problems and questions, particularly those of current importance and interest. He should avoid using too much of the class period for oral testing over the textbook material and instead leave the majority of the time for socialized discussions, telling by the teacher, pupil reports, supervised study, and other effective learning activities.

In all subjects the teacher should subordinate "textbook covering" to efforts to achieve the objectives of the course. He should not make the error of having pupils "learn" the textbook, trusting thereby to achieve the objectives. He should at all times keep in mind that the textbook is not the course itself but only one valuable instrument for teaching and that it must be used intelligently. Also it must be supplemented daily by one or more of a wide variety of teaching and learning materials and devices.

Selection of Textbooks.—While theoretically the high school teacher makes the course of study for the subjects he teaches, in many instances his principal effort at making the course consists of selecting the textbook. Once the textbook is selected the general pattern of the course is determined, at least to the extent that the textbook is emphasized. This is true whether the textbook is the student's only aid or it is used as a reference book along with other textbooks, references, and collateral readings or is supplemented with workbooks, lectures, field trips, visual aids, and other instructional materials and methods.

Because of the degree to which the textbook determines or constitutes the course of study, great care and intelligence should be exercised in selecting it. Among the more important criteria and procedures the following should be observed.

1. The teacher should determine in advance *the principal objectives or educational outcomes which the course or subject is expected to develop in the learner*—what types of information, ideals, attitudes, interests, skills, habits, concepts, understandings, and

tastes. These should be thought of in broad terms and areas, not in small, specific, or narrow terms. An understanding of the interdependence of people in the United States, for example, is more important than a knowledge of the campaign of 1908. The objectives should be in terms of growth on the part of the learners, not in terms of subject matter—in other words, in terms of ends and not in terms of means.

2. The teacher should think of the *main units of possible subject matter* which if included in the course could best be used to make important progress in achieving the objectives of the course. He should list the units in the order of their relative importance.

   Before formulating objectives and selecting units, the teacher should read carefully the best available discussions of objectives and courses of study in the field in which the textbook is to be used, e.g., "The Report of the Committee on Mathematics in the Post War Years" as published in the May, 1945, issue of the *Mathematics Teacher*. If the teacher is not sure what are the best publications of this nature, he should write to a specialist in the teaching of the subject at some university or large teachers' college.

3. He should make a list of *the kinds of activities and teaching aids that would be most useful* in achieving the objectives he has in mind—projects, observations, pictures, etc.

4. In examining textbooks with a view to adoption, he should *evaluate each book carefully* in the light of the objectives of the course and other criteria such as the following:
   (a) Amount of material in the book
   (b) Accuracy of the content
   (c) Emphasis given different topics in terms of their relative significance
   (d) Adaptation of the vocabulary to the vocabulary ability of the learners who will use it
   (e) Relative simplicity of sentence and paragraph structure
   (f) Attractiveness of style—its interest-provoking qualities
   (g) Semi-mechanical aids and features such as use of bold-faced type, headings, and cues, index, table of contents, and footnotes
   (h) Mechanical features such as appropriate size of type, quality of paper, and quality of binding
   (i) Quality and quantity of such learning aids as tables, pictures, diagrams, graphs, maps, summaries, questions, and problems
   (j) Competence and background of the author or authors
   (k) Relative recency of the material as indicated more by content, references, footnotes, etc., than by date of copyright

Among the more important things to be remembered are that larger textbooks are to be preferred, especially in content subjects, e.g., history, the social studies, and the sciences. The modern philosophy of learning favors utilizing an abundance of rich materials and not "learning off" condensed materials. Sound and permanent growth is no more obtained by "learning" artificially condensed materials divorced from their natural rich associations and applications than sound health and physical growth can be achieved by eating small capsules of highly concentrated minerals and vitamins alone. In history, for example, a book of seven or eight hundred pages should represent the minimum amount of material for a senior high school class.

Criteria of Textbooks in Particular Subjects.—The relative value of criteria for textbooks vary somewhat from one subject to another. As the outcomes differ in the various subjects, the points of emphasis also vary. Recently a group of graduate students enrolled in a course in the teaching of science prepared a list of criteria for textbooks in chemistry, as follows:

1. Does the text give reasonably full treatment to appropriate materials?
2. Are the style and arrangement developed for ease of student usage?
3. Is the language simple and effective?
4. Does the text raise a great number of questions?
5. Does the text have an abundance of teaching helps?
6. Has the book been kept reasonably up to date?
7. Has the author (or authors) had extensive experience in his field?
8. Has the book had adoptions in some of the more progressive schools?
9. Are principles clearly developed and easily recognized?
10. Are numerous applications of the principles clearly listed?
11. Is the text flexible enough for realization of varied objectives?
12. Does the author constantly strive to inculcate scientific attitudes throughout the book?
13. Can the text capture and hold interest by its practical applications of principles?
14. Is the text arranged for understanding of principles rather than for simple mastery of facts?

Score Cards and Check Lists for Evaluating Textbooks.—As an aid to teachers in keeping in mind the more important items by which a textbook should be judged, a number of score cards and check lists have been developed and are widely used. Some of these are for textbooks in general and some for judging textbooks in a given field. The following is a summary[3] of a score card for rating high school texts:

	Possible Score	Actual Score
1. Publication:		
(a) Date and grade level	35	
(b) Training of authors	15	
(c) Educational experience of authors	40	
(d) Bases for writing book	60	
2. Content:		
(a) Appropriateness of topics	80	
(b) Proportional distribution of subject matter	60	
(c) Validity[4]	—	
(d) Style	60	
(e) Organization	90	
(f) Aids for use within book	157	
(g) Teacher aids	120	
3. Mechanical Makeup:		
(a) Binding	25	
(b) Typography	25	
(c) Quality of illustrations	70	
4. Adaptability	25	
Total	862	

Textbook Improvement.—There is strong evidence that textbook publishers are becoming increasingly aware of the need for better textbooks. Some of the aims of the publishers for improvement of textbooks are as follows:

1. To print more vigorous and vital texts of greater human interest, permitting more illustration and graphical explanations
2. To present greater resources of materials in the way of type, paper, illustration, binding, etc.
3. To use several different printing processes
4. To promote a greater use of color
5. To present more beautiful bindings[5]

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[3] J. R. McKillop, "Score Card for High School Texts," *American School Board Journal*, LXXXVI, 54-59.

[4] No numerical value was assigned to validity by the author of the score card. In scoring books, all errors of fact were listed, and five points were deducted for each such error.

[5] W. A. Kittredge, "Five Years' Progress in School Book Design," *Publishers Weekly*, CXXXIX, 1037

5. The Selection and Use of Workbooks and Supplementary Reading Materials

The Use of Workbooks.—The limitations of textbooks, of the number and variety of exercises provided by teachers, and of the quality of assignments made by teachers led to the development and use of workbooks. The workbook is so called because it provides "work" for the student to do—questions to answer, problems to solve, projects to undertake, drill and practice materials, tests, and remedial assignments. It has in recent years come to be rather widely used.

Although controlled experimentation in the use of workbooks has not definitely established the degree of their value, some of the experiments have indicated that pupils' performance on written tests was more satisfactory in classes in which workbooks were used than in those where they were not used. The experiments, however, throw little light on the matter of how much time of teachers was saved for other work by the use of workbooks. Most of the experiments were conducted years ago when the workbooks available were not generally of superior quality and in general not coordinated with the textbook and other phases of the course.

In a study by Goodrich, 232 users of workbooks reported their opinions of the general values of workbooks as follows:[6]

Absolutely essential	8
Very useful	67
Useful but not a necessity	127
Work planned by teacher generally better	29
Worse than useless, harmful	1

Values of Workbooks.—Among the values of the workbook the following may be mentioned:

1. Provides definite assignment of supplementary material
2. Makes practice and review materials readily available
3. Provides wider variety of learning activities
4. Supplies student with copy of assignments
5. Provides for individual differences by:
   (a) Variety of tasks for different interests
   (b) Diagnostic tests—some for self-diagnosis
   (c) Remedial materials keyed to diagnostic tests
6. Furnishes study materials for home work and study halls
7. Saves time in class period ordinarily used in copying exercises

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[6] T. V. Goodrich, "Is the Workbook a Necessity or a Luxury?" *School Executives Magazine*, L, 359-396.

8. Provides training in self-direction and independent study
9. Provides a simple means by which pupils can study while absent from school and thus make up work missed
10. Saves time of teacher for other work

Not all of these advantages apply to all workbooks. Some workbooks do not possess qualities or contain materials contributing to one or more of the above advantages.

It should be evident that the workbook does not relieve the teacher of the responsibility of planning the daily work, including use of the workbook. He must plan to use the workbook as a supplement to the textbook, coordinating the two. He must plan assignments in advance in terms of differences among the learners in ability, interest, and need. Most workbooks should not be followed closely. The teacher will unquestionably lack skill at first in the use of the workbook. Skill will have to be developed through study and experience.

Weaknesses and Dangers.—The lack of positive experimental results markedly favorable to the use of the workbook is indicative of the limitations inherent in their use. The following limitations should be recognized and kept to a minimum by careful planning:

1. Lack of coordination with the textbook
2. Some material not adapted to interests or abilities of class with which workbook is used
3. Materials not well graded
4. Failure of some materials to contribute much to the objectives of the course ("busy-work," blank-filling, petty questions, etc.)
5. Lack of sufficient choice in the references to books and periodicals to take care of lack of library materials in the local school
6. Failure to provide materials especially for bright pupils and for slow or dull pupils
7. Abuses in use of workbooks:
   (a) Lack of careful planning by teacher
   (b) Acceptance as self-teaching devices
   (c) Lack of adaptation and correlation with course
   (d) Over-emphasis upon non-essential outcomes

Criteria for Judging and Selecting Workbooks.—In selecting workbooks for use in secondary school classes the following criteria should be kept in mind:

1. The workbook should be used as a supplement to and not as a substitute for the textbook.
2. The workbook should provide amply for reading of references on each of the topics and units.

3. The readings, problems, exercises, and other materials should be systematically correlated with the textbook and should intelligently supplement it. For this purpose a workbook especially constructed for use with the adopted textbook is preferable.
4. The vocabulary and style of writing of the workbook and the references included in it should be appropriate for the pupils who will use it.
5. The learning activities included should be adapted to the interests, the abilities, and the previous background of the students.
6. Learning activities should include some adapted to the interests and abilities of weaker students and some which are appropriate for the abler ones.
7. There should be a sufficient number and variety to provide for variation in interests.
8. In certain subjects, the workbook should provide illustrative materials to supplement the textbook.
9. The learning activities should be appropriately distributed with respect to the different objectives of the course, including ideals, attitudes, interests, and tastes as well as information and skills.
10. There should be ample provision for diagnostic checking up on possible failure of individual pupils in any of the more important outcomes of the course.
11. There should be optional material (in most subjects) for drill upon weak points of individual pupils as discovered by the diagnostic devices.
12. If checking or grading by the teacher is contemplated, it should be provided for in such a way as to be economical of the teacher's time.
13. The learning activities should for the most part be self-explanatory or sufficiently explained to require a minimum of explanation by the teacher.
14. There should be some "shutoff" device to avoid the continuance of study and learning activities far beyond the point of adequate learning.
15. The contents should be in attractive form.
16. The workbook should be mechanically sound, i.e.:
    (a) Sufficiently well bound to last through the course
    (b) Printed in a type size appropriate for high school students
17. Where materials are to be handed in or checked by the teacher, the pages involved should be readily detachable and should provide a blank for the student's name.

Types of Collateral and Supplementary Reading.—Most textbooks do not contain sufficient reading materials, and those included are highly condensed. There arises almost daily in the content subjects the need for additional reading materials. These are of different types, among which are the following:

1. Materials which develop more intensively and thoroughly one or more phases or units briefly treated in the textbook
2. Materials relating to topics omitted from the textbook which the teacher may think best to assign to one or more of the students
3. Materials which differ in point of view from those in the textbook
4. Materials written in a different and perhaps more interesting or attractive style

While it is frequently useful to assign *collateral* readings in other textbooks, they are usually not sufficient. Supplementary readings are also needed. Supplementary readings are materials which fall into the first three categories mentioned above—materials which do not merely parallel the textbook but extend beyond its scope. They treat topics much more intensively and in much more detail than those in the textbook. They may contain materials which relate to topics perhaps not even mentioned in the textbook.

Pamphlets.—The increasing use of pamphlets in the high schools of today reveals a recognition on the part of teachers of the need for textbook supplementation. Current pamphlets contain recent information, whereas most textbooks require several years for writing and publication. Pamphlets can be published in a very short time; they are inexpensive, and for that reason more pamphlets than books can be purchased. The one difficulty is, however, that everyone can publish pamphlets. There is always a great mass of them on the market espousing one cause or another.

Bibliographies of pamphlets are being published now for the use of school libraries to enable students to get first-hand information in a very simple manner. Government bulletins and pamphlets are usually very difficult to locate as many libraries do not have an efficient cataloguing system for them. These bibliographies enable more classes to use pamphlets and governmental documents.[7]

Using Collateral Readings.—Among the ways in which collateral readings may be used to advantage are the following:

1. The class may be given definite assignments by title and page for which all are to be held responsible. This is simply an ex-

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[7] H. H. Shoen, "Pamphlets," *School and Society,* LI, 165. Among the pamphlets widely used are the Public Affairs Pamphlets, covering a wide range of subjects and applicable to various types of course of study units, which are published by the National Association of Secondary School Principals in Washington.

tension of textbook teaching but is often useful in widening the scope of material and in introducing new or different viewpoints or treatments.

2. The class may be given, from time to time, a list of supplementary materials from which they may select what they wish, being responsible not for pages but for the mastery of topics, problems, or questions. This plan is very much to be commended in instances where the grip of the teacher and the subject on the class is sufficient to insure that a considerable portion of the class will search in the extra-text materials. The freshness resulting from the contribution of material not found by others and the pride engendered in the contributor add greatly to the interest and life of the class.
3. Individual reports should be used much more widely than is commonly done. In this fashion the brighter individuals may be given additional opportunity, and often the uninterested student may be roused to take interest in the work if an assignment of a particularly attractive type is given to him. It is unfortunate that many high school teachers do not know the literature of their subjects well enough to do this sort of thing successfully.
4. Collateral reading may be employed in planning flexible or differentiated assignments.
5. Where the problem or project method of teaching is employed, collateral reading in connection with the problem or project is not only desirable but essential.

Care should be taken that students are not made responsible for more outside reading than they can do successfully. In the high school about 100 minutes a day, including the class period, in each subject is all that can be expected from the conscientious pupil of average ability. About forty-five minutes a day on the average is all that the average child will spend outside of class on any one subject. Twenty to forty pages an hour is a fair measure of the reading rate of a high school pupil, depending, of course, upon the number of words to the page, the difficulty of the style and thought, and the thoroughness with which the material should be read.

While at times some record of the chief points of what has been read should be kept in the form of notes or outlines for future use in making reports, for comparison with other readings, or for tests, and while students should be taught how and encouraged to do such note-taking, the practice of requiring notebooks and outlines to be handed in as a check on the outside reading is of very doubtful value. The spirit in which such notes are usually taken is not favorable to careful thinking. The processes become mechanical; the burden often becomes oppressive; and the notebook work operates to destroy interest in the subject. If not carefully handled, individual reports may likewise become tiresome to all concerned. Inasmuch as reports require considerable time and are usually presented in an ineffective manner, the law of decreasing returns soon begins to operate. Occasional questioning or informal conferences such as may seem natural and of interest to the class may be substituted for complete formal reports.

QUESTIONS, PROBLEMS, AND EXERCISES

1. What factors should be considered by a teacher in the selection of content in the subject he teaches?
2. Formulate a list of objectives which should serve as guide-posts in the construction of a course of study for your teaching subject.
3. How may the classroom teacher assist in the selection of textbooks?
4. What collateral materials may be used to supplement textbooks in the subject you plan to teach?
5. What changes in the use of textbooks have resulted from changes in classroom methods and curricular reorganization?
6. Select the three criteria which are of the greatest importance in selecting a textbook in your major subject. Justify your selection.
7. Evaluate two standard textbooks of recent publication in your teaching subject upon the basis of the suggested criteria.
8. Outline a plan for the effective use of textbooks in your teaching subject.
9. Discuss the advantages and disadvantages of free textbooks in high school.
10. What factors should be considered by the teacher in making a decision to use a workbook in his course?

Chapter 16

VISUAL AIDS TO TEACHING

Effective learning is dependent upon accurate concept formation. Sensory experiences serve as the basis of all understandings which pupils acquire in classroom situations. While direct sensory experiences would, no doubt, form the soundest foundation of learning, the practical limitations upon the scope and variety of such experience make it necessary to resort to the use of verbal symbols.

Unless the learner can associate the spoken or written word with some past or present perceptual experience, the resulting concept will most likely be vague, meaningless, and ephemeral. Elementary school teachers recognize that the lack of reading readiness among younger children may be caused by a limited experiential background. Difficulties encountered by older children in other types of learning have a similar origin. Meaningful, present learning experience can emerge only from significant past experience, which is properly associated in the mind of the child with his immediate needs.

The utilization of past experience, however, does not assure the continuity of learning experience. The learner must be able to comprehend the elements in the current learning situation. It is essential that the symbols involved be accompanied by appropriate imagery. The manipulation of oral or written words without proper understanding is frequently referred to as *verbalism*. The visual sense provides the child with most of his sensory experience. Some psychologists estimate that at least 90 per cent of one's impressions are derived through the eye. Meanings gained through the other senses also are often thought of in visual terms.

Visual aids have long been employed in teaching. Modern psychology of learning and technological progress in the production of visual aids have served to give new impetus to *visual education* or the use of visual aids in teaching. The extensive use of training films in the Army and Navy during World War II has emphasized their educational value. Evidence of the increased interest in more extensive use of visual aids is to be found in the recent actions of city and state boards of education.

1. Types of Visual Aids

The most notable contribution of science to the development of visual aids has been the motion picture. As a result of its spectacular characteristics and wide general acceptance, it has been considered as synonymous with visual education. This, however, is an erroneous conception, as there are various types of visual aids, each possessing its own distinctive value. Among the most readily available and usable are:

1. Projected pictures:
   - (a) Films
   - (b) Film strips
   - (c) Opaque projections
   - (d) Slides
2. Unprojected pictures:
   - (a) Photographs, prints, paintings
   - (b) Textbook illustrations
   - (c) Pictorial pamphlets
   - (d) Postage stamps
   - (e) Stereographs
3. Graphic materials:
   - (a) Cartoons
   - (b) Charts
   - (c) Diagrams
   - (d) Graphs
   - (e) Maps
   - (f) Posters
4. Objects, models and specimens:
   - (a) Biological specimens
   - (b) Dioramas
   - (c) Working models
   - (d) Museums

Dramatizations, demonstrations, experiments, and school excursions are sometimes considered as types of visual aids. They are, in reality, *techniques* of making available some of the visual aids in the foregoing list. Exhibits, collections, bulletin boards, and sand tables also are referred to as visual aids. These terms pertain to the plan of arrangement or instrument used in the display of various types of visual aids. Since the techniques of visualizing instruction are significant for the teacher in the modern high school, they are discussed in appropriate chapters of this book. For example, a discussion of the school excursion is contained in Chapter 18, "Utilizing Community Resources in Teaching."

2. VALUES OF VISUAL AIDS

On the basis of results obtained by the use of visual aids in classrooms over a considerable number of years, sufficient evidence is available to reveal clearly their effectiveness in teaching. This conclusion is supported by the findings of educational experimentation. In a summary statement of research in visual education Dale[1] states, "More than fifty such experiments (of varying scientific exactitude) offered the almost unanimous conclusion that films conveyed information in ten to twenty per cent less time than usually required by other methods." Investigations of the value of visual aids in promoting other types of learning have yielded equally conclusive evidence. Among the values of visual aids revealed by educational research and actual classroom use, the following appear to be the most significant. Not all of them are equally applicable to all types of aids.

Use in Breaking Technical and Psychological Bottlenecks in Learning.—Reference has been made in the preceding section of this chapter to the technical difficulties which students encounter in making verbal experience meaningful. Another obstacle to effective learning is the student's attitude toward certain materials of instruction. A literary classic as presented in a printed volume may be very unimpressive or even forbidding to a high school student. A good screen version of the classic is likely not only to contribute to understanding and retention but also to arouse a compelling desire to read the book. After *A Tale of Two Cities* was shown as a motion picture, school and public libraries in many cities were overwhelmed with requests from high school students for the book.

Use in Supplementing Knowledge Obtained from Other Sources.—Knowledge for its own sake is unimportant. As the basis of sound judgment and appreciation it is fundamental. To be well informed is to possess the first essential of effective, intelligent action. Visual aids not only enable the student to see information from books in a new light, but they also add to his fund of knowledge and thus help him to see the facts gleaned from textbooks in their proper relationships.

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[1] Edgar Dale, "The Real Film Problem," Ohio State University *News Letter*, X, 1-4.

Use as Helps in Enlarging the Environment of the Individual.—By the proper use of visual aids, a student may live realistically and vicariously in environments remote in time and space from his immediate surroundings. The Congo River may appear to a student as only a crooked line on a map. A motion picture makes him realize that it is a surging turbulent stream and thus furnishes such a background of imagery that rivers on maps are no longer mere verbal or diagrammatic abstractions. In history, films portraying the struggles of our forefathers in establishing this nation give the student a vivid understanding of early American history which cannot be gained from verbal descriptions.

Use in the Promotion of Intellectual Curiosity.—A well-chosen photograph or film of a scene of historical significance is most likely to arouse an interest in the study of the event. Pictures of places of geographical interest serve to promote the reading of books on the subject or to create a desire to visit the place. The curiosity aroused in a school boy by a photograph in a geography textbook may become the source of his interest in the people of another country. It is far from the truth that children's interests are necessarily limited to their immediate environment. While students should be interested in living conditions in their immediate neighborhood, it is likewise important for them to have a desire to know how people live in other parts of the world. Visual aids may serve to arouse curiosity about the New Zealander equivalent to the interest in near neighbors. Tourist bureaus have capitalized upon the appeal of well-illustrated materials in attracting tourists to certain localities.

Contribution to Greater Acquisition and Longer Retention of Learning.—The intensity and accuracy of impressions received through the eye are conducive to more lasting imagery. Basing his statement on results of an experimental investigation of the comparative effectiveness of pictorial teaching aids in safety education, Goodman makes the following generalization:[2] "The investigation offers additional research [indicating] that all the pictorial media [in this investigation, the media consisted of sound film slides and silent film slides] aid materially in the learning process for both immediate and delayed recall, and for groups of both high and low I.Q." The relative effectiveness of concrete experience as compared to verbal instruction is dependent upon the nature of the instruction and the student's previous experience with the visual aids used in instruction.

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[2] David J. Goodman, "Comparative Effectiveness of Pictorial Teaching Aids," *Journal of Experimental Education*, XII, 20-25.

Visual Aids Make for Economy in Time in Instruction.—During World War II it was necessary to provide maximum training in minimum time for millions of members of the armed forces and workers in war industries. To achieve this objective, films were utilized on an unprecedented scale. Estimates[3] of the amount of time saved in the training of technicians for war plants and the military forces range from 25 to 75 per cent. Careful selection of visual teaching materials in terms of the desired outcomes and effective procedures in their use may make similar savings possible in classroom situations. A concept of an object or a process can be established through the eye in a small fraction of the time required to read a description of it. In many high schools students utilize various types of visual aids in their study of a unit as readily as they use textbooks.

Use in Fostering Favorable Attitudes for Learning.—Novelty and variety may be introduced into classroom situations by means of visual aids. Monotony promotes boredom, which is detrimental to the formation of favorable attitudes toward learning activities. While entertainment is seldom the main outcome to be sought in the presentation of visual aids, joyous attitudes are desirable concomitants of any educational activity. The humor of exaggeration, present in some educational films, serves a useful purpose. In the recent war, the United States Navy incorporated humorous incidents in some of its training films. For example, a film on the proper unloading of a pistol clip to prevent the spring from uncoiling in one's face was brightened immeasurably by a live action shot of a careless individual unloading the clip in the wrong way and almost getting his head knocked off. A recent film for schools on safety education utilized humor in an effective manner by portraying the harrowing experiences of a simpleton who disregarded traffic signals, placed ladders at improper angles from buildings, and failed to observe open manholes in sidewalks.

3. VERBALISM IN OUR SCHOOLS

Reliance upon verbal methods in teaching can be attributed to several causes. The fact that students are able to repeat words from books or teacher's lectures with a considerable degree of accuracy has led to acceptance of the belief that learning is thus achieved. Words have incredible power when charged with appropriate meanings. Only when they are dissociated from the reality of experience do they become mere abstractions. Teachers would be amazed, and perhaps humiliated, if they could see the images which some of the words used in their teaching call up in the minds of their students. Teachers have been further misled in observing the outcomes of verbal methods of instruction by the fact that some students are able to perceive meanings from oral and written words. Failing to obtain satisfactory initial learning because of the inability of many students to form accurate concepts from written and spoken symbols teachers often seek to bolster retention by drill and repetition.

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[3] See report of Commission on Motion Pictures in Education of the American Council on Education in *Motion Pictures for Postwar Education*, VIII, 3.

Psychologists have demonstrated the futility of drill on learning materials to which the learner can attach no meanings, i.e., nonsense syllables. On the other hand, when such materials are presented in a manner enabling the learner to associate them with something in his experience, more rapid acquisition and longer retention in learning are achieved.

Printed materials are more convenient to use in teaching than other forms of sensory aids. The apparently easy adaptability of printed materials requires little ingenuity on the part of the teacher. To require students to read words and repeat them as an evidence of learning is a relatively simple process in contrast to that of directing students in the effective use of other types of sensory aids.

The reluctance of teachers to employ visual aids extensively can be traced to another factor. When motion pictures were first introduced into schools, they were in many instances improperly used. The "auditorium-show" technique of using the earlier films, added to their technical imperfections and limited educational value, caused teachers to doubt their effectiveness for teaching purposes.

The limited utilization of all types of visual aids may also be attributed to the failure of many teachers who could in their own learning perceive meanings from printed symbols to recognize the difficulties that many of their students encounter in visualizing the imagery back of the written or spoken word.

The narrow concept of teaching as a process of directing students in "subject-matter-to-be-learned" activities has resulted in acceptance of the belief that subject matter in a convenient printed form makes for economy of time. This has become an important consideration in view of an ever-increasing body of knowledge and a continuously expanding curriculum. It is difficult, however, to perceive any real economy of time in the superficial learning of a multitude of vague, meaningless facts. The elimination of teaching materials of little significance and the development of a clear understanding of essential material should serve to promote real economy of time in learning.

Objections to Use of Visual Aids.—In the early stages of the visual education movement the objection was raised that visual aids, particularly the film, might have a harmful effect upon language development. Subsequent research has revealed the fallacy of this fear. In a summary of the results of an experiment conducted with 275 United States Army trainees, selected at random, Rosenthal[4] stated that in a written examination most of the trainees who had seen a training film especially designed to teach a topic demonstrated more understanding than the trainees to whom the same material had been presented by an instructor and who had not seen the film. The former group also drew diagrams to illustrate their answers, while the latter one merely gave back to the instructor, largely in his own words, what he had given them.

The results of these investigations confirm the contention of psychologists that many language difficulties have their origin in the individual's inability to form clear concepts. Valuable as visual aids may be in providing a sound basis for language training, they are not a substitute for such training. In this connection the *supplementary* character of visual aids is most clearly revealed. It is essential that students shall be given opportunity in English language and other classes to verbalize their visual experiences.

It is frequently asserted that visual aids promote superficial thinking. In measuring the results of an experiment to ascertain the values of sound pictures in science teaching, Rulon[5] incorporated some examination items which required generalizations from factual materials. He found that groups which had seen films were superior on these items to those which had studied only textbook materials.

Basic to abstract thinking is the possession of clear sensory images. The trite phrase "food for thought" implies an essential ingredient of thinking. A necessary prerequisite of sound reasoning is a reasonable concept. Imagination needs to be linked with realistic experience. Thinking also involves perceiving significant relationships. Visual aids help in supplying meanings, the priceless ingredient of thought. How effectively an individual uses these materials depends upon his mental ability and habits.

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[4] Newman Rosenthal, "Films as Aids in Science Teaching," *Progressive Education*, XXIII, 156-157, 168.

[5] Philip J. Rulon, "The Sound Motion Picture in Science Education," *Harvard Studies in Education*, XX. 236

4. DETERMINING WHAT AIDS TO USE

When it appears that some type of visual aid will serve a useful purpose in a particular classroom situation, the teacher is required to make a decision in regard to what type of aid to use. The type most suitable in a given situation is dependent upon several factors. The standards for selection of a particular visual aid are more specific. They will be considered later in this chapter in the discussion of each visual aid. Among the factors which should be considered in selection of the type of visual aid are:

1. *The degree to which the type of aid is adapted to the objectives and problems of the course.* For example, if the desired outcome is the understanding of a process involving motion, the motion picture is particularly suitable; in the physical sciences demonstrations of the action of objects or materials are valuable; in biology, field trips for the purpose of observing and studying animals and plants in their natural habitat are important; maps and globes assist in the formation of accurate concepts of the relationships of places.
2. *The relative effectiveness of the available types of aids.* A considerable amount of educational research has been devoted to the relative values of different types of visual aids. The evidence is clear that different types of aids serve different purposes. In many instances the decision in regard to what aid to use is not in terms of the relative superiority of one aid over another, but rather of what combination of aids is the most desirable.
3. *Proper balance and variety of aids.* Not all types of visual aids are equally effective in different types of classroom activities. For example, stereograph views are well adapted for individual pupil study, whereas projected pictures are appropriate for group activity. The interests of an individual pupil may be more adequately served by a variety of aids than by a single one. A model may arouse the interest of one pupil, while the dramatic quality of a film may make a strong appeal to another. The selection of aids should be made on an objective basis, thereby avoiding overemphasis upon those types which may have a particular fascination for the teacher or for a small number of the members of the class.
4. *The extent to which the type of aid is adaptable to the students' mental abilities.* Visual aids and other teaching materials appro-

priate for one group of students may appear to be "kid stuff" to another group.

5. *Availability and cost of aids and time required for presentation in the classroom.*
6. *If the visual aid has been used previously by the teacher, the evaluation he and his students have made of it.* In an increasing number of schools, the expert opinion of the director of visual education is available to teachers.

5. Using Projected Pictures

The Motion Picture.—There is an increasing awareness of the educational and social significance of the motion picture. Research has revealed that no more powerful instrument exists for influencing attitudes, disseminating information, stimulating emotions, establishing standards of conduct, and impelling people to action. Aside from its potential value as a teaching aid, the school can no more ignore the motion picture as an important element in our culture than it can the press or the radio.

At present, motion picture audiences are estimated at 90,000,000, of whom 11,000,000 are children under 13 years of age. In terms of the amount of time people spend in them, only the home and school surpass the motion picture theaters.

The teacher can be fairly certain that students' present and future activities, in and out of school, will be greatly influenced by the motion picture. The inclusion of films in their school experience should serve the purpose of assisting them in the development of a more intelligent understanding and appreciation of this important force in individual and social behavior. The use of motion pictures in schools can also be justified on sound educational grounds. As a teaching aid its distinctive value lies in its ability to depict motion. The portrayal of action is essential to the proper understanding of processes and relationships which involve continuity. The dynamic quality of the film also contributes to pupil interest and motivation.

After seeing a sound film portraying plant growth, the late Glenn Frank[6] stated his reactions to educational films as follows:

> Yesterday, within the space of ten minutes, I saw a plant grow to full maturity, bear fruit, and die.
>
> I had to wait forty years to see it, but yesterday the thing I wondered about as a child happened.

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[6] Glenn Frank, "I See a Plant Grow," *Teaching with Motion Pictures,* Davenport, Ia.: Victor Animatograph Corporation, p. 4.

I saw the processes of growth as clearly and as plainly as this morning I see motors streaming by in the street below my Chicago hotel window.

I was not under the delusive spell of a magician.

I was simply watching an educational film on plant growth.

A pea was dropped on the ground.

Soon its side burst open and a white sprout, or whatever the experts call it, came peering with manifest curiosity out into the open.

This white sprout turned downward and began nosing about for a way to burrow downward into the soil. It nosed about with an appearance of almost animal sense. Soon it began its downward journey into the soil which had been cut away so the camera could catch the downward journey of the root. I saw the root branch off to the right and to the left.

Then another sprout began to lift its head into the air. It had a little of the look of a dinosaur's head. It seemed almost in pain as it writhed and twisted and unfolded itself. Then came the unfolding of the flower. A bee came to steal its nectar and to catch a cargo of its pollen to carry it, as a kind of traveling salesman to the plant world, to another plant that fertilization might take place.

I saw protoplasm, the stuff of life, racing back and forth in pollen tubes as a mountain stream might leap and foam.

Another pea, dropped on stony ground, tried the same life process. The white sprout peered out of the open side of the pea and began nosing about for a way downward into the soil. But there was virtually no soil. And it seemed to me that the sprout actually grew frantic in its quest of soil. Finally, defeated in its quest of fertile earth, the upward reaching sprouts and branches of the pea began to wither, and death came with something of the jerk of death I have seen when animals and men die.

All of this was NOT trick representation. It was actual photography of growth and death. Microscopic and time-lapse photography had caught the slow growth of the pea and then had speeded up the picture to bring the life cycle within the space of ten minutes.

The teacher who is willing to ignore and to let lie unused so amazing a teaching medium as this is either blind to progress or simply scared lest the film become too vivid a competitor to mediocre teachers.

Types of Teaching Films.—Teaching films may be classified on several different bases. Some of the most common classifications are:

1. On basis of motion involved:
    - (a) Observable by the human eye, e.g., film portraying the manufacture of glass
    - (b) Unobservable by the human eye, e.g., films on plant growth (This type of motion may be achieved by time-lapse photography, slow-motion photography, microphotography, or miniature photography.)

2. On basis of color:
    - (a) Color films
    - (b) Black-and-white films

3. On basis of sound:
    - (a) Silent films
    - (b) Sound films

4. On basis of function:
    - (a) Incentive film
    - (b) Demonstration film
    - (c) Information film

The most significant classification is that made on the *functional* basis (number 4 in the foregoing list).

The *incentive-type film* is designed to arouse the interest of students in the initial stages of study of a topic. It may serve to motivate students by revealing the significance of a problem. The showing of this type of film represents one of the several possible approaches to the study of a unit of instruction.

The *demonstration film* shows students how to exert a manipulative skill. The advantage of the demonstration film over the demonstration performed by the teacher or student is that the camera can reveal minute details usually not visible to the human eye.

The *information film* presents information relevant to a topic in a manner which enables students to perceive relationships not evident when other means of instruction are used.

Selection of Films.—A considerable amount of educational research has been devoted to the relative effectiveness of the various types of films. A much-debated issue in visual education circles has been that of the value of *sound* versus *silent* film. On the basis of the results of experimentation the sound film has its adherents, while the silent film advocates are equally enthusiastic. The fact is that the evidence is quite inconclusive in regard to the relative effectiveness of otherwise identical sound and silent films.

More recently the relative values of black-and-white film versus color film have been the subject of investigation. An experimental study by Long[7] on the influence of color in sound films upon acquisition and retention of learning revealed the superiority of colored sound films over black-and-white sound films.

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[7] A. L. Long, "The Influence of Color on Acquisition and Retention as Revealed by the Use of Sound Films," mimeographed thesis for the degree of Doctor of Education on file in the University of Colorado Library.

The really crucial issue involved in the selection of a film for classroom use is the purpose to be served by the film. For example, if the purpose is to arouse the interest of students in the reading and appreciation of an English literature classic, a film version of the book should possess the following characteristics:[8]

1. It must reproduce the spirit of the book, its movement, suspense, and charm.
2. It must faithfully represent the characters portrayed by the author.
3. It must have a well-knit *dramatic* plot in accordance with the principles of plot formation.
4. Its settings—exteriors and interiors of buildings, furniture, costumes and manners of the people—must be appropriate to the period.

General considerations in the selection of films include the following:

1. The availability of the film (possibility of obtaining the film when needed)
2. Mechanical and technical quality of the film
3. Possibilities of correlating film with the topic being studied
4. Appropriateness of film to mental and social maturity of the students
5. Distinctive contribution to be made by the use of the film, e.g., motivation, providing information, culminating activity
6. Opportunities for follow-up procedures

Use of Films.—Proper utilization of films for classroom purposes is dependent upon an understanding of their role as *supplementary* teaching aids. They are not designed to replace books or the teacher. They cannot serve all the purposes of instruction. In fact, except in cases where an understanding of processes is involved, films may be inferior to other types of visual aids, such as film strips. Good teaching techniques based upon sound educational principles are as essential in the use of films as of any other type of instructional materials.

The effective use of films requires careful planning, not only in terms of the outcomes sought but also in regard to the proper facilities. The excessive and indiscriminate use of films hinders rather than promotes the learning process. A useful list of suggestions for using teaching films has been formulated by the Committee on

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[8] Adapted from "Photoplay Studies," *A Study Guide*, Newark: Educational and Recreational Guides, Inc., I, 6.

Motion Pictures in Education of the American Council on Education,[9] as follows:

1. Have a clearly formulated educational purpose for the use of the film. Both teachers and students should know the purpose for which the film is being used and, if possible, should share in the formulation of that purpose. Failure to have a clear objective usually results in an apathetic or irrelevant student response.

2. Preview a film before it is used in class. It is not possible to plan effective use of a film without rather detailed knowledge of its contents. Previewing is also a protection against the use of inappropriate films.

3. Use films in learning situations. Most of the films should be used in classroom units of study. The use of films in auditorium programs planned in terms of educational objectives is not excluded, but the preparation and follow-up necessary for the best use of an educational film are difficult to secure in an auditorium situation. Educational films should not be used on programs designed primarily for entertainment. As entertainment, they cannot compete with the Hollywood product, and such a comparison tends to lessen their value as educational materials.

4. Relate film showings to other learning experiences. The film may expand, verify, or make more vivid concepts which have already begun to develop. It may be related to the whole unit of instruction either in the preparation for the showing or in the activities which follow.

5. Examine films critically from the standpoint of emphasis. Films on foreign countries often stress those subjects which photograph best, and slight or exclude less photogenic subjects. Such emphasis may lead to a false impression of the country and people shown in the film. Teachers and students should ask, "To what extent is this film representative of the country shown?"

6. Use films as the basis for inferences concerning the countries shown. Though a film may make no direct reference to climate, yet the type of climate may be inferred from buildings, clothing, and vegetation. Films, like first-hand visual experiences, offer wide opportunities for observation and inference. Inferences which may be drawn from the film may be equally as important as the ideas specifically stressed by the titles or by the commentator.

7. Use films to further the development of attitudes and appreciations. Films are particularly effective in this area. The development of a feeling of acquaintance with a people and appreciation of their achievements may be a more important function of a film than teaching about rivers, cities, and products.

8. Use films as many times as necessary to achieve the desired educational objectives. Most films may be shown to an advantage at least twice, and many should be shown three or four times.

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[9] American Council on Education, *The Other Americas through Films and Records*, pp. 1-3.

9. Select films best adapted to the interests and maturity level of the group with which they are to be used. While it is true that many films may be used successfully over a wide range of grade levels, there are points of diminishing return. While the recommendations regarding grade levels indicated for the films in this study may be of some help to the teacher, they should be verified when the film is previewed.

After the film has been selected upon the basis of the foregoing criteria, the teacher should plan a definite procedure for the teaching of the film. The following steps may be suggestive:

1. The teacher should preview the film for the purpose of becoming familiar with its content and organization.
2. The teacher should prepare a brief list of the main features of the films which are emphasized in the lesson.
3. The pupils should be given an assignment which includes:
   (a) Reading materials giving information in brief story form in regard to the general nature of the film
   (b) If a sound film is used, a list of the unfamiliar words to study in order to understand the sound track
   (c) A list of questions pertaining to the main points of information included in the film
   (d) A list of suggestions to pupils in regard to what to look for in the film
4. Have the class view the entire film without interruption.
5. Follow up the showing of the film with a class discussion of the main points presented in the film.
6. Have the class read textbook and supplementary materials related to the subject of the film.
7. Have individual pupils read and give reports to the class on special problems suggested by the film.
8. Show the film, stopping at any time to clarify questions raised by the class.
9. Give a test based upon the film, related readings, and class discussion.

Motion Picture Projection Equipment.—The effectiveness of teaching films is more dependent upon the quality and intelligent utilization of the equipment than is the effectiveness of any other visual aid. The expense involved in the purchase of satisfactory projectors and films has seriously impeded their extensive use in schools. However, the cost of these facilities now has been reduced to a figure within the budget of almost any school. The complicated mechanism and heavy weight of the equipment formerly made it difficult to arrange and operate. Portable projectors are now available which are light enough to be carried from place to place. Most of the models can be attached to ordinary light sockets. Projectors are also available which operate from storage batteries, farm lighting plants, or a portable generator which can be attached to any automobile.

Multiple-purpose projectors can be purchased which by a simple adjustment can be adapted for showing 2″ x 2″ slides, film slides, and many other 16-mm. projection materials. This type of projector can alternate slides with motion pictures. The economy of purchasing this type of equipment must of course be considered in relation to the amount and type of materials to be used. Announcements, advertisements, and illustrated songs can be included in the showing of a film. Most of the recent projector models make it possible to hold an individual frame for any time desired to study details.

A daytime projection box is now on the market which permits showing pictures in daylight by means of a shadow box. The shadows caused by wings at the top and bottom of the box make the daylight projection possible. The manufacturer claims it is satisfactory for audiences of up to 150 persons. A feature of this equipment is a brilliant glass-beaded varnished screen which reflects sufficient light to make daylight use possible. The screen is an important item of equipment. Pictures shown on blackboards or walls lose much of their original color, contrast, and detail. A white or beaded glass screen is considered the most satisfactory.

Fire hazards can be largely eliminated by the use of 16-mm. noninflammable film. Film should be stored in a metal container when not in use. Proper humidity of the storage vault is an important matter. If exposed to the air for long periods of time, all film, and particularly safety or non-inflammable film, dries out and becomes brittle. Torn film should be returned to the manufacturer for repair. It is necessary that film be kept free of oil and dirt.

The proper care and operation of motion picture equipment are sufficiently important to warrant study in a program of teacher education. Many of the larger school systems have recognized the importance of this matter to the extent of retaining persons on their staffs who are skilled in the maintenance and operation of motion picture equipment. Many teachers have taught their pupils to operate the simpler types of equipment.

Developing Motion Picture Appreciation.—One of the reasons for incorporating motion pictures in the curriculum is to give pupils a basis for intelligent evaluation and appreciation of them, as was suggested earlier in this chapter. In English classes, or as part of the core curriculum, students can be guided in formulating a set of criteria for judging motion pictures and also in applying the criteria to pictures they see in commercial motion picture theaters. There follows a set of criteria[10] for judging motion pictures for use in schools:

1. Entertainment value
2. Basic theme
3. Story
4. Appropriateness of title
5. Dramatic plot structure
6. Social value
7. Direction
8. Characterization (acting and speech)
9. Settings, costumes, make-up, properties
10. Sound and musical effects

Film Strips.—Film strips are also known as slide films, film rolls, stereopticon films, and film slides. They are still pictures, printed on short strips of standard width, non-inflammable motion picture film and may be used in place of glass slides. They can be projected serially or singly, and forward or backward as desired. Both silent and sound types are available. They cost only a fraction as much as regular motion pictures and are convenient to handle. Another advantage is that a picture can be held on the screen for any length of time desired and pictures previously shown can be turned to. A disadvantage is that the pictures have to be shown in a predetermined order. The silent slide films possess great flexibility in teaching in that the teacher can emphasize certain pictures by explanations as they are held on the screen. The sound film strips which reproduce sound from disc records can be run without sound in the event the teacher wishes to supply the explanation or have the class discuss the picture. Since the slide films do not move, stronger impressions can be gained by closer attention to details than the moving film permits. The projection equipment is relatively simple and inexpensive.

Slides and Opaque Projections.—Glass slides of photographs and diagrams are well adapted to group instruction and small auditoriums. Both the slides and the necessary projection equipment are inexpensive. The equipment is relatively simple and easy to operate. In comparison with film strips, glass slides are more durable and less likely to be damaged by heat. Another advantage of slides is that it is not necessary to show them in any fixed sequences. The standard size (3¼" x 4") slide is large enough to give the picture the desired detail. However, many modern slide projectors now are made for 2" x 2" slides. A recent innovation is the synthetic-plastic slide. In many high school classes, students make their own slides.

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[10] Sarah McLean Mullen, *How to Judge Motion Pictures.*

Many slide projectors have an adjustment feature which makes it possible to show either slides or opaque materials. Regular opaque projectors are also available. By means of these projectors postcards, materials from the pages of a textbook, or geology specimens can be shown on a screen. A dark room and a good screen are absolutely essential. Light-projected maps are also quite widely used. Proponents of these maps claim they have much greater teaching force than the traditional wall map, because they can be more easily seen and are easier to handle than a series of wall maps. Map slides in color are now available. Perhaps the most satisfactory slides are those prepared by experts in photographic work; however, many teachers add to their list of slides by having students assist in making them.

Like other visual aids, slides should be selected carefully for classroom use. Among the criteria for selection are relevancy, technical quality, maturity of students, and contribution to the work at hand.

6. Using Unprojected Pictures

Flat Pictures.—Unprojected pictures are often referred to as "flat" pictures or merely as "pictures." The various kinds of unprojected pictures include actual photographs, prints, paintings, murals, and illustrations in textbooks, magazines, and other publications. They can be obtained from photographers, school supply companies, and many other sources. From the standpoint of pupil interest, an excellent source is the student's or teacher's own collections. Flat pictures are inexpensive and abundant in variety and scope. They may be in color or black-and-white.

The unique value of this form of pictorial aid lies in its possibilities for detailed analysis and study. Mountains, other geographical features, and many constructed works lend themselves to more effective portrayal by still pictures than by motion pictures due to their natural immobility.

As is true of all instructional materials, the effectiveness of pictures is dependent upon wise selection and skillful teaching procedures. On the basis of the combined judgment of authorities in visual education, Trolinger [11] prepared a score card for checking pictures for classroom use. The qualities and weights attached to each quality are as follows:

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[11] Lelia Trolinger, *Evaluation of Still Pictures for Instructional Use,* monograph, Chicago: The Educational Screen, p. 19.

	Perfect Score
Technical quality:	
Artistic	11
Clear and definite	11
Free from blemishes	5
Of practical use	7
Properly colored	6
	40
Instructional quality:	
Truthful	15
Authentic	8
Relevant	11
Significant	9
Stimulative	11
Suggestive of relative size of objects	6
	60

Use of Pictures in Teaching.—It is obvious that the first essential in the effective use of pictures is that each student be able to see the picture clearly and distinctly. Many teachers, however, fail to devise adequate methods of showing pictures. A single large picture may be utilized satisfactorily for group study. In the case of smaller pictures, it is desirable to provide a sufficient number of duplicate copies of each picture so that each student may have a copy for individual study. If duplicates are impossible to obtain, it will be necessary to rearrange the seating so that all may see a single picture or one of a limited number of pictures. A common error is to distribute a large number of more or less unrelated pictures to be passed along hurriedly from one student to another.

Better results are usually obtained if the members of a class concentrate on a few pictures during a given class period. When it is necessary to "pass pictures around" in the class, the pictures should be arranged in some logical sequence. The chief value of pictures of this type depends largely upon thorough analysis and study, which require time and involve guiding pupils in observing the various features of the picture. Individual and group discussion based on the objects and their relationships in the picture are often fruitful.

Pictures can be clipped from various types of publications and can be mounted very easily. Mounted pictures can be shown to greater advantage and retained for future reference more easily than unmounted ones. When not in use, they should be filed according to subject and topic. Proper labeling for purposes of identification is also desirable.

Textbook Illustrations.—Many textbooks and supplementary reading materials are well illustrated. These illustrations can serve a useful purpose in contributing to the student's understanding and appreciation of a topic. The teacher can relate them to the reading material by directing attention to the meanings they convey. Investigations have revealed that unless this is done, students often fail to understand the full significance of pictures in books.

A few well-chosen pictures of artistic merit add to the attractiveness of classroom walls. They also may become the basis of or a supplement to classroom study. Pictorial bulletins, many in color, suitable for bulletin boards are available from commercial organizations. Many current bulletins pertain to historical, scientific, or industrial themes. As is true of other bulletin board materials, only a few should be displayed at any one time, and they should be changed from time to time.

Many state libraries have a variety of pictorial materials available for use in schools which can be obtained on a free rental basis except for transportation costs. These materials, particularly valuable for the study of state geography and history, consist of mounted pictures, books and periodicals containing pictures, magazine and newspaper clippings, and photographs of pictorial materials too valuable to be lent.

The series of pictorial pamphlets entitled "Building America," prepared by the Society of Curriculum Study, is well adapted to classroom teaching. The materials are organized on the unit basis. They are published monthly, each issue being devoted to some one aspect of American culture. They may be readily correlated with other curriculum materials or be used as the basis for development of units of instruction in various phases of American life.

The postage stamp collection has great educational significance in these days of increased attention to world geography and foreign countries. The stamps of many countries have considerable artistic merit, but it is in the fields of geography, history, and international relations rather than art that postage stamp collections have their greatest value. The late President Roosevelt referred to stamp-collecting as the "science of human relationships." Many issues of United States stamps have commemorated significant historical events and the achievements of leaders in art, education, music, science and government. Stamps of foreign countries depict the geographical features, products, history and peoples of those countries. Stamp collecting in school often becomes the basis of a life-long hobby.

Stereograph.—The stereograph is a twin picture giving the illusion of three dimensions. It is produced by a bifocal camera or two cameras arranged at different angles. The lenses of the stereoscope, through which one looks at stereographs, magnify and merge the two pictures into a single image. The sense of realism engendered by the stereograph makes it a particularly valuable visual aid in the teaching of geography and solid geometry. It is not designed for group instruction but rather for individual study. There are two types of stereoscopes. One type is the hand stereoscope, which is quite inexpensive and does not require the use of electricity. Sets of stereoscopes sufficient for many pupils may be purchased at a reasonable cost. The other type is known as the telebinocular. It is electrically equipped and shows the details of the picture very clearly and vividly.

7. USING GRAPHIC MATERIALS

Graphic materials depict ideas by emphasizing certain elements in a situation and subordinating others. They are not designed to reveal details as other types of visual aids do. In this respect they are the most abstract of all visual materials. They arrest the attention by exaggeration or unusual arrangement of line and color. Their power lies in their ability to convey meanings dramatically and instantaneously. Their direct and forthright treatment and their simplicity of form enable them to portray an idea of light humor or one of great social significance.

Cartoons and Posters.—The degree of interest which can be developed in commonplace objects or events by graphical representation is disclosed by the popularity of the newspaper comic strips. Recently an effort has been made to capitalize for educational purposes on the appeal that comics make to children. A series of cartoon books designed to teach history, science, and religious subjects is in the process of publication. The artistic quality and potential interest value appear to be satisfactory.

The comics, however, represent only one of several forms of cartoons. Magazines, newspapers, and books contain many cartoons of considerable political and social significance. These offer many possibilities for supplementing numerous areas of the school curriculum.

The quick initial impression which a good cartoon makes may be superficial and fleeting unless it is accompanied by further reflection. Students can be guided in their study of cartoons by discussions which assist them to understand the symbolism and to interpret the meanings. A comparison of cartoons representing different points of view may serve to stimulate an interest in reading leading to the development of an unbiased interpretation of the issue or subject depicted.

By line, composition, or color, the poster emphasizes one dominant theme. It is designed to convey one idea directly and forcefully. The strong impression it makes may be utilized to impart information, to develop attitudes, or to disseminate propaganda. An analysis of posters, such as those in the series by Rockwell Kent on the "Four Freedoms," can serve to open new vistas to the study of many economic and social problems.

As one of the culminating activities of a unit of instruction, students may summarize attitudes and knowledge they have acquired in the study of the topic by designing and making posters. Thus training in techniques of drawing and in the use of color and other materials is provided in a purposeful situation.

Maps.—The function of the map is to give a graphic representation of the abstract concepts of distance, direction, location, and size. Maps were among the first types of visual aids to be used in schools. Recent developments in the preparation of maps have made them much more useful in teaching than they formerly were. In comparison with the older types, the newer maps give a far more accurate representation of the relative positions of places on the earth. For example, the new "air-age" maps with the North Pole in the center show the land masses of the northern hemisphere grouped about the Arctic Ocean in their proper perspective. While the land masses south of the equator are somewhat distorted, these maps enable the student to form accurate concepts of air-line distances, as well as the physical, economic, and political relationships of countries in the northern hemisphere which are significant in the air age.

The subject matter depicted in maps nowadays is also much wider in scope and variety than it was a generation ago. An examination of the kinds of maps available at present indicates that practically every aspect of knowledge comes within the scope of the map maker. On the basis of form maps may be classified as globes, relief maps, and flat maps: An understanding of the wide range of topics which are encompassed by maps can be gained by attempting to classify flat maps according to content. The types of flat maps now available include air-line maps, current events maps, political maps, political-physical maps, product maps, rainfall maps, temperature maps, soil maps, vegetation maps, military maps, literary maps, population maps—some showing location by nationality, religion, or institutions, road maps, and many more.

The mechanical features of maps for school purposes have been greatly improved in the last generation. More consideration is given to proper arrangement and balance of materials. Color is used more effectively, and useless detail is omitted. Maps should be selected with reference to the maturity of pupils, purposes to be served, and the type of learning activities involved. For example, in group instruction large or projected maps are necessary. If individual study of maps appears desirable, smaller maps for individual use should be available. If pupil activity in the making of maps appears feasible, desk outline maps should be obtained.

Use of Maps in Teaching.—The effective use of maps as visual aids is more dependent upon classroom arrangement and other routine matters than is true of most instructional materials. As part of the preparation for teaching a topic with the aid of maps, the teacher should examine the available maps pertinent to the topic, select the types and sizes best suited to his purposes, and arrange the maps in advance for optimum use.

One purpose of the study of maps in schools is to teach pupils to use them effectively in their own study. It is no compliment to elementary and high schools that students come to college without a knowledge of directions as indicated on maps. The following list of suggestions for utilizing maps as visual aids has been adapted from McKown and Roberts:[12]

1. Be sure that the pupil comprehends the purpose of the map—what it is for, why it is necessary, and how it is used to provide information about the activities of man, including the pupil himself.
2. Promote the development of a favorable emotional set. This can be achieved by assisting the student in finding the answers to his or the teacher's questions. Simple maps which are easy to interpret and understand should be used in the early stages of map study.
3. Allow ample time for the pupil's first "looks." Permit him to survey the whole map before he concentrates on the different elements which comprise it.
4. Be sure that the pupil understands map symbolism. This involves an understanding of the conventional symbols for land, water, elevations, the equator, parallels, meridians, etc. Equally

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[12] Harry C. McKown and Alvin B. Roberts, *Audio-visual Aids to Instruction*, New York: McGraw-Hill Book Co., Inc., pp. 85-87.

important is that he be able to visualize the meanings back of the symbols. Other visual aids, such as pictures, films, and stereographs, properly correlated with maps, help the student in visualizing the symbols.

5. Use maps at the opportune time. Maps should be used only in meaningful situations when needed to answer questions, solve problems, or supply information. Maps should not be taught apart, but rather as an integral part of the work in a subject.

8. USING OBJECTS, MODELS, AND SPECIMENS

The study of objects in their natural surroundings provides the best basis for understanding of their functions and relationships to other objects. It is obvious, however, that all objects included in the curriculum cannot be studied in their native habitat. Students can be afforded first-hand experience with many objects by bringing them into the school. When they are studied against the students' background of experience with similar objects, they become an important aid to learning. The dual approach to learning—by sight and by touch—which is provided by this type of visual aid adds meaning and realism to school work.

Models.—Models which are representations (not reproductions) of objects have certain distinct values. A model may represent in miniature an object which is too large for complete study. For example, more significant relationships can be revealed by studying a model of the earth than by scanning the horizon. On the other hand, a model may be made much larger than the actual object and so permit more detailed study. In using models in teaching, the teacher should be certain that students obtain a clear understanding of the relative sizes of model and object.

Working models with moving parts are of great value in developing understanding of mechanical devices. The dynamic quality which motion gives to models is well illustrated by the exhibits in the New York Museum of Science and Industry in New York City. Museums would be more interesting to adults and children alike if they contained fewer stuffed elephants and more animated objects.

Specimens.—Objects can be arranged to reveal certain relationships in an effective manner. For example, relics of the American Indian can be grouped in the chronological order of their origin and use. By combining paintings and models or objects, the diorama creates realistic impressions. The realism of a foreign coin collection arouses interest and motivates student study far better than a series of drawings and verbal descriptions of the objects. Newspapers or reprints published on the dates of significant historical events are effective in giving students a sense of reality in regard to the events.

Use of Models and Specimens.—In courses in history and science the construction of models by students presents excellent opportunities for creative, meaningful work. Specimens suitable for use in science classes can be collected, mounted, and labeled by the students. Many objects which enrich and vitalize teaching in various subjects can be obtained free or borrowed from people in the local community. Commercially made models are also available at a nominal cost.

In using materials of this type as teaching aids, the teacher should be certain that the aids are relevant to the topic and that they can be closely correlated with other instructional materials. The novelty of an aid may arouse initial general interest. It should do more. The attention of the class should be focused on the aspects of the object which bear a direct relationship to the study topic. The possibilities of relating these aids to other activities in connection with a subject include further reading about the object, writing reports on it, making diagrams or drawings of it, and individual and group discussions based upon it.

Many objects, models, and specimens collected for class use have permanent values. They can be used time and again if properly preserved and stored. The objects collected by a class might well become the nucleus of a school museum. The typical high school building of today affords little space for a school museum. When educational leaders gain a clearer vision of school buildings in terms of modern teaching procedures and objectives, the school museum will occupy a prominent place in every high school building.

9. Sources of Visual Aids and Equipment

There are numerous companies and organizations from which visual aids and equipment may be purchased or rented. A selected list of distributors is given in the table on the following pages. The teacher can obtain from these sources catalogs and bulletins describing the materials which are available. For a more complete list of distributors, the teacher may consult professional journals such as *Film and Radio Discussion Guide, Educational Screen, The Nation's Schools, The School Executive,* or *The American School Board Journal.*

DISTRIBUTORS OF VISUAL AIDS AND EQUIPMENT

DISTRIBUTORS	VISUAL AIDS AND EQUIPMENT										
	Films	Film Strips	Film Projectors	Glass Slides and Projectors	Posters, Pictures, Charts	Stereographs and Stereoscopes	Opaque Projectors	Pictorial Exhibits	Maps and Globes	Education Comics	*Slide-making Materials*
Air-Age Education Research, New York	√	√			√			√	√		
Art Institute of Chicago					√			√			
Bausch and Lomb Optical Co., Rochester, N. Y.			√	√			√	√			
Bell and Howell Co., Chicago			√								
Charles Beseler Co., New York	√		√	√			√				
Brandon Films Inc., New York	√	√	√								
British Information Services, Film Division, Central Depository, New York	√							√			
Commission of Human Relations, Progressive Education Association, New York	√										
Coronet Instructional Films, Chicago	√										
George F. Cram Co., Indianapolis									√		
Curriculum Films, Inc., New York	√										
Department of Labor, Children's Bureau, Washington	√				√						
DeVry Corporation, Chicago	√		√	√							
Division of Visual Aids, U. S. Office of Education, Washington; or Castle Films, Inc., New York (motion picture and film strips produced by U. S. Govt.)	√	√			√						
Eastman Kodak Co., Rochester, N. Y.	√		√								√
Encyclopaedia Britannica Films, Inc., Chicago	√										
Extension divisions of most state universities	√	√		√				√	√		
Films of The Nations, Inc., New York	√										

DISTRIBUTORS OF VISUAL AIDS AND EQUIPMENT (*Continued*)

DISTRIBUTORS	VISUAL AIDS AND EQUIPMENT										
	Films	Film Strips	Film Projectors	Glass Slides and Projectors	Posters, Pictures, Charts	Stereographs and Stereoscopes	Opaque Projectors	Pictorial Exhibits	Maps and Globes	Education Comics	*Slide-making* Materials
The Jam Handy Organization, Chicago	√	√									
Keystone View Co., Meadville, Pa.				√		√	√				√
E. Leitz Inc., New York				√							
Museum of Modern Art, New York								√			
The National Council of American-Soviet Friendship, Inc., New York					√			√	√		
New Tools for Learning, New York	√					√					
Pan American Union, Washington	√				√						
Educational Director, Pan-American World Airways System, New York					√				√	√	
Perry Pictures Co., Malden, Mass.					√			√			
Rand-McNally Co., Chicago									√		
Society for Visual Education, Inc., Chicago	√	√	√	√			√				√
Southern Visual Equipment Co., Memphis, Tenn.	√	√	√								
State libraries in capital cities					√			√			
Teaching Films, Inc., New York	√										
True Comics, New York										√	
United Air Lines, Chicago					√			√	√		
Victor Animatograph Corp., Davenport, Ia.			√	√			√				√
Vocational Guidance Films, Inc., Chicago	√										
Young America Films, Inc., New York	√										
Y. M. C. A. Motion Picture Bureau, New York	√										

QUESTIONS, PROBLEMS, AND EXERCISES

1. What recent developments in secondary education have increased the need of visual instruction?
2. How may high school pupils be taught to evaluate and appreciate good motion pictures?
3. Discuss the validity of the argument that visual instruction tends to remove the opportunity for training in the use of language.
4. Make a list of the abilities and skills high school pupils should acquire in the use of maps. Outline in some detail a plan of teaching designed to assist a class in the acquisition of four of the skills on your list.
5. Suggest methods of evaluating the outcomes of learning achieved by the use of a motion picture in classroom instruction.
6. Make a collection of cartoons from current magazines and newspapers for use in your teaching subject.
7. Describe the types of visual aids you would select in teaching a unit in your chosen subject and explain how you would use them.
8. List some objects, models, or specimens which might be used effectively in teaching a particular unit in one of your classes. From what sources could each of the items on your list be obtained?
9. Nominate a committee to select and show a film to the class. Suggest the proper procedure in using the film in a high school course.
10. Using the criteria suggested in this chapter for evaluating pictures, select pictorial materials for use in a unit in a high school course.

Chapter 17

AUDIO AIDS TO TEACHING

1. Values and Types of Audio Aids

Basic to learning is the acquisition of insights and meaning through the senses. The multiple approach through ear, eye, and touch contributes to more effective initial learning and greater retention as compared with approach through only one sense. The use of audio aids to supplement other means of instruction represents one effort on the part of teachers to aid children in a clearer understanding of learning materials.

Until quite recently the number of practical auditory aids available for use in the classroom has been very limited. The phonograph has been the chief supplementary teaching aid which makes its appeal to the auditory sense. For many years after the invention of the radio, technical difficulties as well as teachers' lack of awareness of its instructional possibilities hindered its acceptance as a classroom teaching aid.

Recent scientific progress has eliminated many of the technical obstacles. The effectiveness of the radio in calculating ideas and developing attitudes of people outside the school has been amply demonstrated. Still another cause of the increased interest in radio as an aid in teaching has been recognition of the fact that radio listening has become an important leisure-time activity of youth. As a result of these developments, teachers have given consideration to two questions, namely:

1. How can teachers assist pupils in making their leisure-time radio listening more beneficial?
2. How can audio aids, including the radio, serve to reinforce classroom instruction in achieving the desired outcomes of education?

Faced with the challenge inherent in these two questions, teachers have employed various forms of audio aids to supplement their classroom instruction. At present audio aids have taken their place beside the textbook and supplementary reading materials as an integral part of the course of study. Chief among these aids are:

Public address systems and sound amplifiers
The radio
Phonographs
Sound recording equipment—play-back devices
Sound pictures

2. Public Address Systems

Administrative Functions.—A feature of many of the newer high school buildings is a central program-distribution sound system. While there are some advantages in installing a public address system when a school building is constructed, the fact is that any school which owns a 16-mm. sound projector has only to purchase a microphone and plug it into the amplifier or sound projector to create a public address system. There has been a prompt recognition of the value of the public address system for administrative purposes. The most common use to which it has been put has been the announcement of school events of general interest to pupils and teachers. Many schools have arranged one or two regular announcement periods each day, at which time all the announcements for the day are made. A strict adherence to this plan, except as emergency situations may arise, avoids the interruption of regular classroom activities.

Educative Values.—While the administrative functions of the public address system have been accepted, its potential significance for educational activities of students has not been fully realized in many schools. The values of student utilization of the facilities of the central sound system have been summarized by Loudermilk[1] as follows:

1. *Expression:* In the field of creative expression, it has been claimed that the broadcasting of student programs over school program-distribution systems:
   (a) Provides students with an additional outlet for creative expression, which combines the familiar skills and techniques of the stage with other skills and techniques unique to radio
   (b) Provides extended opportunities, beyond those afforded by the auditorium stage, for students to participate in the dramatic arts

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[1] R. R. Loudermilk, "School Uses of Central Program-Distribution System," *Educational Research Bulletin,* Ohio State University, XX, 43-45.

   - (c) Tends to develop on the part of students an appreciation of radio drama as a distinct form of art
   - (d) Tends to develop genuine radio program discrimination by making students conscious of the attributes which make for superior quality in any radio program

2. *Service:* Definite service values have been claimed for certain types of broadcasts produced by student groups, such as:
   - (a) Broadcasts designed specifically for use by other student groups as programs for supplementing classroom instruction
   - (b) Broadcasts designed for use by other student groups within the school as recreational or entertainment programs
   - (c) Broadcasts designed for interpreting the work and the purposes of the school to parent organizations

3. *Training:* It has been claimed that preparation and broadcasting of student programs over school program-distribution systems tend to:
   - (a) Develop, on the part of participating students, effective style in verbal expression
   - (b) Develop, on the part of participating students, the basic skills and understandings that are involved in radio program production
   - (c) Train students for participation in educational or public service broadcasts produced over the facilities of local broadcast stations
   - (d) Make students of listening groups somewhat more conscious of the characteristics of effective oral expression

4. *Integration:* Finally, it has been claimed that preparation and broadcasting of student programs over school program-distribution systems tend to:
   - (a) Emphasize the importance of group planning and cooperative effort
   - (b) Create an area of student activity which combines skills and understandings developed in each of the several departments of instruction within the school
   - (c) Provide a unifying core around which the work of extracurricular groups related to broadcasting can be organized

Student broadcasts over the public address system may take the form of *dramatizations* from scripts prepared by students themselves or obtained from outside sources, such as the United States Office of Education. Properly correlated with English literature class work, these dramatizations should have both entertainment and educational values.

Another type is the *student panel discussion.* Many topics about which there are differences of opinion lend themselves to the democratic process of student discussion. The topic may pertain to school problems or to those of general interest. Important educational outcomes which should result from such discussion are greater proficiency in speaking by participants and a greater sensitivity to important current issues on the part of the entire student body.

Student newscasts may be given by groups of students who are made responsible for reporting news of school events as well as those of general community, national, and international significance.

Students may properly utilize the public address system for making *announcements* in regard to various types of school events in which the student body is expected to participate. This is a logical outgrowth of policies which encourage student participation in planning and managing many of their own activities.

Variety programs may be broadcast by students. "Pep talks" before athletic contests, programs in aid of school drives, rehearsals for participation in public speaking contests, and music recitals are typical forms of the student variety program.

3. The Radio

The only justification for using a particular teaching aid is that it possesses, singly or in combination with other aids, certain unique values. In other words, its use must contribute more effectively to a process or an outcome than does any other available medium. The potential value of radio as an instrumentality of teaching is tremendous; its actual significance is dependent upon the manner in which it is utilized in the attainment of worthy educational objectives. The chief general values of radio as a teaching medium are discussed in the following paragraphs.

Radio can motivate pupils. The radio program possesses several characteristics which are significant for purposes of pupil motivation. One of the most important is *timeliness.* Radio broadcasts of important events tend to eliminate feelings of remoteness which students attach to many topics presented in the classroom. One of the difficulties teachers encounter in motivating pupils in their study is the haze of unreality surrounding many classroom activities. A great deal of our teaching has been in terms of "long ago and far away." First-hand accounts of significant happenings have a touch of reality which makes a strong appeal to students. Interests aroused by the broadcasts can be used as a point of departure for further study and reading on the broadcast topic, as well as related topics. Another motivating factor is that the radio *eliminates barriers of space,* bringing the world to the classroom. Broadcasts of significant current events taking place in the United States and elsewhere help to create real, lifelike classroom situations. Great personalities from every walk of life share their knowledge and enthusiasm with students in the classroom. Descriptions of historical events, forums, and the discussions of challenging problems by authorities serve to stimulate and inspire pupils.

Radio can invigorate knowledge. The greatest contribution of radio to education lies in the inherent dramatic power of the spoken word. It can give vital meaning to instructional materials which otherwise may appear abstract and impersonal. Radio broadcasts, therefore, may serve to provide students with vicarious experiences having much of the force of actual experience. Authentic information, presented by well-informed radio speakers, also supplements knowledge obtained by students from books and other sources. As an integral part of the course of study, the radio is one of the determiners of the pupils' school experiences.

Radio can establish standards in language usage. The standards of diction and pronunciation set by most radio speakers are worthy models for high school students. The extent to which faulty diction, careless pronunciation, and other errors in language hinder effective presentation of ideas on the radio becomes apparent to students. This awareness of the significance of correct language usage becomes a motivating force for improvement of their own standards of speech.

Radio can develop and increase worthy interests. New interests in drama and music may grow out of guided radio listening in the classroom. Until the advent of radio, good musical programs and theatrical performances were not available to most of our high school population. If given the opportunity to hear and the ability to interpret good music, many high school students may develop noteworthy recreational or vocational interests. Dramatizations of good books may lead to more extensive reading of significant material by high school pupils. The radio may also enable students to pursue worth-while interests which have their origins in other situations.

Radio can create desirable attitudes. World-mindedness should characterize the good citizen of the present and the future. Basic to this attitude is an understanding of the different peoples of the earth. By means of the radio, the high school student can acquire a knowledge of the characteristics, needs, and aspirations of the inhabitants of other countries. A sensitivity to the problems of human beings in our own country can be heightened by radio discussions of domestic, social, and economic issues.

Specific Values of Radio in Various Subject-Matter Fields.—Radio may be used to supplement learning activities in the different subject-matter fields. Radio broadcasts may provide an incentive to reading. In cities where radio programs on favorite books have been given, children's attendance at public libraries is greatly increased, and long waiting lists for books discussed on the programs have been made. Radio adaptations of some of the classics in literature may serve to motivate students in more reading of good literature.

Radio may stimulate creative work in English language. High school courses in radio script writing and production, carrying full credit, have been introduced in some high schools. Some of the newer courses in science, such as aviation, may be enriched by appropriate radio programs. In social studies classes radio broadcasts and interpretations of current events are invaluable. The possibilities of radio in music appreciation are practically unlimited. Interviews of representatives of different vocations over the air provide students with significant vocational guidance information. Radio is also a good medium for publicizing sports events sponsored by the school's athletic department through the use of announcements of the events or broadcasts of the actual events or both.

Sources of Radio Programs.—There are several means by which radio programs may be made available in the classroom. In considering the advisability of utilizing one or more of the different facilities, the committee on audio aids should consider not only comparative costs but relative advantages. The chief types of facilities are commercial broadcasting stations, school-owned broadcasting stations, and rented telephone wires.

1. *Commercial Broadcasting Stations.* The use of this facility requires equipping the school with receiving sets in each classroom, or a central receiving system with outlets in the various rooms through which regular radio programs are received. Schools with limited funds have made fairly effective use of the radio by shifting a single receiving set from one classroom to another as needed. The school may also purchase radio time for the purpose of giving broadcasts by students or school authorities. In many communities, schools have been able to obtain radio time gratis or at a nominal rate as a feature of the commercial station's public service program.

Schools have not utilized the radio as fully as have other agencies. There are several reasons why classroom teachers have failed to take full advantage of commercial radio as a supplement to their teaching.

One of the difficulties has been that of adjusting the time of the broadcast to class schedules. The differences in the standard time zones are partly responsible for this problem. Some radio programs are now being broadcast at different times for the different zones. Recording devices and equipment for playing back programs to classes whenever desired serve to overcome this obstacle. With the advent of school-owned frequency modulation broadcasting stations, teachers will be able to use programs at times when they will best serve the purposes of classroom instruction.

Another objection to the use of commercial radio programs has been the limited number designed for juvenile listeners. Formerly programs for children were characterized by a tone of excitement and a flair for the sensational. The charge was frequently made that the general quality of many children's programs was low and in some cases vulgar. Broadcasters have begun to recognize the evils inherent in this type of program, with the result that the number of them is decreasing.

The authors are of the opinion that a third limitation is the amount and degree of misleading information in the form of advertising, and of statements of news commentators on questions of public interest. Increasingly in recent years radio news commentators (with rare exceptions) have become biased and unreliable and, in some instances, clearly propagandists presenting the views and doctrines of the conservative business class which finances and sponsors the program.

A fourth obstacle has been that many radio programs were not sufficiently specific to meet the needs of high school classes. While teachers can expect commercial broadcasters in the future to supply more programs which are specific in content, the main responsibility for this type of program may have to remain with the school-owned stations.

Another handicap under which teachers have worked in their efforts to use programs of commercial stations has been their inability to obtain specific, detailed information about the program in advance. Listener's guides and teacher's manuals are now being provided for several programs by the broadcasting companies or sponsors.

Finally, adequate radio reception equipment has not been available in many schools. As awareness of the educational values of radio increases, school boards will incorporate costs for equipping and maintaining radios in school budgets. Many of the items of radio reception equipment are now more moderately priced than in the past.

2. *School-owned Broadcasting Stations.* Several of the larger school systems own broadcasting stations. Under this plan a school system acquires and operates its own transmitter and other necessary equipment. A license from the federal government is required to operate this type of station. It is necessary also to employ skilled and licensed operators. Programs to the schools are transmitted directly to an antenna in a school and then relayed to the classrooms, or the program may be transmitted to separate antennae for each classroom. If a radio studio is owned by the school, its equipment may be used for instructional purposes in science classes. The students install, maintain, and operate radio stations in many schools. The studio may also be useful for auditions of student announcers, vocalists, and instrumentalists.

3. *Rented Telephone Wires.* Programs arranged by the school can be transmitted from a central studio located in the community by means of telephone lines, which are rented from the local telephone company. The programs are amplified and may be transmitted from one school to another within the school system. The receiving equipment consists of a number of loudspeakers in each school in which programs are to be received. An inexpensive system which has proved satisfactory consists of a small transmitter in the principal's office from which programs are transmitted to receiving sets in the classrooms over the building wiring system.

Phonograph Records and Transcriptions.—The equipment consists of a phonograph in each room where these aids are to be used. Light portable phonographs are used in some schools. The records and transcripts may be kept as separate record libraries in each school, or a central library may be maintained for the entire school system.

The phonograph is the most adaptable of all the audio aids for classroom use. A record can be played as many times as necessary to insure proper understanding and appreciation. Records of the best in music, literature, English speech, and foreign language pronunciation are available at a nominal price. A popular series of foreign language records is accompanied by manuals that reproduce in print the sounds recorded. The manuals include also translations, explanations of how to make the various sounds, and vocabularies. Phonographs with two speeds, operating at either 33⅓ or 78 revolutions per minute can be used to play both ordinary records and radio transcriptions. Transcriptions of many programs can be obtained from local broadcasting stations.

The teacher should listen to all the records to ascertain their suitability and to discover cues for their use before they are played for the class. Records should be selected in terms of specific objectives. In one instance the purpose may be analysis of form and content. In another case the record may be played for mere enjoyment or to give local color to a subject. For example, a record of a popular Spanish song may add a touch of reality to the study of the Spanish language. If records of songs in a foreign language are used, translations of the songs should be made available to the students. A sense of reality is fostered by the use of recordings of the voice of a poet reading his own poetry, such as those made by Vachel Lindsay. Records made by dramatic readers of Shakespeare's plays and other important selections from literature are also available to schools.

Many schools maintain a central record library, which has the advantage of making the records more readily available to all teachers as well as providing a safe place for filing. Unless records are stored properly, they may become warped or broken. Even the new nonbreakable plastic records are subject to warping unless they are carefully protected when not in use.

Phonograph records can be more satisfactorily stored by an experienced librarian than by classroom teachers. Students in literature, history, music, and foreign language should be able to refer in their study to appropriate phonograph records, just as they now refer to books and other printed material. Separate sound-proof booths in the school library can be provided where students may listen to records. The booths may be fitted with glass doors, making it possible for the librarian to supervise the students' activities.

The Use of Phonograph Records.—As an integrated classroom teaching aid, the phonograph record can serve to arouse pupil interest, illuminate and interpret what is read, and stimulate good reading and speaking habits. The following suggestions for the use of phonograph records apply particularly to the teaching of English literature, but the same plan may be followed in using phonograph records in other subjects.

1. Preparatory work of the teacher:
   (a) Listen to the record in order to familiarize yourself with its content and organization.
   (b) Prepare a brief outline of the main points to be emphasized in the lesson.

2. Preparing the students for hearing the record:
    - (a) Have the students read the printed text of the play, with particular emphasis on the scenes included in the record.
    - (b) Hold a general discussion of the play in which you or one of your pupils gives an overview or the story of the play.
    - (c) Have pupils read aloud the parts of the play presented on the record.
    - (d) Before playing the record, suggest to the class that they give particular attention to the inflections, pronunciation, and dramatic qualities of the voices recorded.

3. Play the record through the first time without interruption.

4. Follow-up work:
    - (a) Have the students discuss the main points of the recorded version of the play.
    - (b) Give pupils questions to answer in regard to the main characters, plot, and action of the play as revealed by the recording.
    - (c) Ask pupils to mention and repeat selections or sentences of outstanding beauty or importance.
    - (d) Have pupils dramatize some of the most important scenes in the play. In the original dramatizations encourage pupils to make an effort to rival the recorded dramatization.
    - (e) Have pupils prepare written character sketches of the leading roles in the play.
    - (f) Play the record again, stopping it at any time to clarify questions raised by the class.

4. Use of the Radio in the Classroom

Selection of Programs.—From the vast number of commercial radio programs available, a careful selection should be made of those programs which are most appropriate for classroom use. In many high schools a radio committee consisting of classroom teachers obtains information in advance and recommends to the faculty the use of certain programs. If the members of the committee understand the educational possibilities of radio, and especially if they have among their members a radio enthusiast, they can render an important service to the teachers in school in advising on the selection of radio programs for classroom purposes.

In the event the teacher has the responsibility of selecting programs for his classes, he may not be able to obtain information in advance in regard to every radio broadcast. However, for many radio programs, teacher's manuals and study guides are available from the broadcasting company or the sponsor of the program. The major broadcasting companies will send schedules of programs upon request from the teacher. Information about various programs can likewise be obtained from the local broadcasting station. Radio magazines and bulletins also may be used as sources of information. The main factors which should be taken into consideration in selecting radio programs for classroom use are as follows:

1. *Are the purposes of the program in keeping with the objectives of the unit or course?* In an English language course in which correct pronunciation or good diction is one of the outcomes, the ability of the speaker or actors in these matters is important. If appreciation of drama or music is one of the outcomes sought, the nature of the production and the quality of the performance are essential criteria for selection.
2. Is the program relevant to the immediate learning activities of the class? If the class is in the initial stages of the study of a topic, the chief value of the program may be that of motivation. In the study stage of the topic on which students are assembling information, a radio program which presents factual material pertaining to the topic is desirable. In the culminating stages of the study of a topic, the radio program may serve as a climax to the students' activities.
3. Are the content and the manner of presentation such as will appeal to the interests of the class? The vocabulary and style of the presentation should be adapted to the abilities of the students. The character of the material should be such that it can be adapted to effective presentation on the radio. The presentation of the program should meet a high standard of excellence. The use of maps and supplementary reading materials and the study of unfamiliar words in the broadcast are effective methods of adapting the program to the abilities of students.
4. Is the length of the program appropriate? The age and maturity of students are important considerations in making this decision. If the broadcast is too long in terms of the attention span of the class, many of the important values of the program will be lost. The length of the program in relation to the length of the class period also should be considered. In many instances the optimum value of a radio program can be attained only when it is followed by a discussion in which the students and the teacher participate.
5. Is the time of the broadcast suitable? Except in the case of a spot program of considerable current significance, radio programs should be selected which will not interrupt the daily schedule too seriously. However, the value of the program, rather than its

adjustment to a fixed schedule, should be the determining factor in regard to the use of a broadcast in the classroom. In this connection schools encounter one of their main difficulties in the use of commercial station broadcasts. The recording of radio programs for rebroadcast at more appropriate times is one solution to this problem. School-owned broadcasting stations can plan their programs to fit the instructional schedule of the different classes and schools, or they may repeat certain programs.

Preparation of the Class for the Broadcast.—The amount and kind of preparation depend upon the purpose and type of the broadcast. If the program is selected well in advance of the actual broadcast, the teacher may give a preview of the topic in the form of a discussion in which dramatic episodes related to the subject are included to arouse student interest. Sufficient information should be given in the presentation to provide pupils with enough of the background of the program to enable them to appreciate it. It may be advisable for the students to engage in some pre-broadcast study of the topic. If, for example, the radio program is about the people of some foreign country, an assignment might be given which would involve:

1. Preparation of a list of books on the country by a committee of the class
2. Class study of a map of the country
3. Study of the meanings of words which are peculiar to the country
4. Study of pictures of the country
5. Brief reports by individual pupils on different aspects of life in the country

Assignments for Out-of-School Broadcasts.—In the event the pupils are expected to listen to radio broadcasts during out-of-school hours, assignment should be as clear and definite as that of any other lesson. (For discussion of the characteristics of an effective assignment, see Chapter 7).

An assignment based upon a radio program should make provision for:

1. Proper motivation through relation of the program to the pupils' past experiences, telling interesting incidents, etc.
2. Definite information in regard to the time of the broadcast and the name of the station broadcasting the program
3. Sufficient basis for understanding the program: information in regard to the characters or speakers, something about the play or musical composition, etc.

4. Clear understanding of why the pupil should listen to the program
5. A knowledge of what post-broadcast activities will be expected by the teacher, e.g., class discussion, individual reports, tests, etc.

Activities During the Broadcast.—It is essential that the physical environment be conducive to effective listening. In most instances the classroom is the most desirable place for pupils to hear radio programs. Assembling a large number of students in a school auditorium is not a satisfactory arrangement for hearing most radio programs. The receiving equipment should be adjusted for maximum clarity and tonal quality. Distractions of all kinds should be reduced to the minimum.

Any reference materials to be used in connection with the broadcast should be readily available. The students may be expected to make brief notes of items for further study or discussion, or if the teacher feels that note-taking distracts the attention of students from the program, he may wish to make brief notations of topics for later consideration by the class. In some types of broadcasts, the use of maps and pictures during the program may be desirable. In teaching music by radio the use of the score when listening to a selection of music is often helpful. The selection may also be repeated on a phonograph record for further analysis and study.

Post-Broadcast Activities.—The maximum benefits from most radio programs can best be achieved by follow-up activities related to the broadcasts. Dependent upon the type of program and its contribution to the specific objectives of the course, the follow-up procedures may take one or more of the following forms:

1. Class discussions of challenging problems suggested by the broadcast
2. Club activities stimulated by the program
3. Experiments following up a broadcast
4. Showing slides or films related to the broadcast
5. Reports by individual pupils to the class on topics related to the broadcast
6. Reading of books stimulated by the program
7. Test of basic understandings, information, and terminology

Methods of evaluating the results of school radio activities in the teaching of English have been suggested by O'Steen [2] as follows:

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[2] Alton O'Steen, "Evaluation of School Radio Activities in the Field of English," *Radio and English Teaching,* New York: D. Appleton-Century Company, Inc., pp. 224-225.

Activity	Purpose of the Activity	Suggested Method of Evaluation
1. Listening in school to radio drama (and other programs)	Enjoyment	Observing the class while listening Noting expressions of enjoyment during discussion of the program, including requests for more of the same kind Having students write freely about the program Having students fill out a free-response questionnaire
	Discrimination in radio listening	Having students list, at intervals of several months, their four or five favorite radio programs; discussing these lists and the programs; noting and discussing changes in favorites Permitting criticisms of radio programs to be used for "credit" in class work Criticism by students of a live radio program or a transcription Analysis by students of professional or amateur radio scripts
2. Listening in school to book reviews	Voluntary reading	Making the books reviewed available in the classroom and keeping a record of the books read voluntarily Having the librarian keep check on reviewed books withdrawn Having students keep a reading record over a period of at least one school year
3. Listening at home to radio programs suggested in school	Discrimination in radio listening	See section 1 above
4. Producing radio programs in school	Enjoyment	Noting spontaneous interest, eagerness to participate, etc.
	Improvement in script-writing	Comparing scripts, getting opinions of other students on scripts, noting audience reactions
	Improvement in microphone speaking and daily speech habits	Teacher criticisms of microphone performance; student criticisms of each other; recording voices and playing the records back
	Information about radio	Giving a radio information test
5. The unit or course in radio "appreciation"	Discrimination in radio listening	See section 1 above
	Information about radio	Giving a radio information test

Student Evaluation of Radio Programs.—Critical and intelligent radio listening, both in and out of school, should be one of the outcomes of the use of the radio in school. Students should be guided in formulating a set of criteria for judging radio broadcasts. Class discussions of some of the programs in terms of the criteria are held in many schools. Some of the matters which may serve as a basis of the discussion are:

1. Objectionable advertising
2. Propaganda
3. Undesirable emotional appeal
4. Aesthetic value
5. Reliable and unprejudiced source of information
6. Craftsmanship in music, acting, speech and synchronization

Student Participation in Radio Broadcasts.—Participation by students in the production of programs for broadcasting over the local commercial or school-owned station may have several valuable results. Chief among them are that it:

1. Provides student motivation for creative work in preparing and presenting programs
2. Gives students a keener insight into the mechanics of writing and producing radio scripts
3. Develops functional usage in speech and writing through acquaintance with the techniques of radio writing and presentation
4. Constitutes an effective type of school publicity which affords the school an opportunity to render service to the community through the promotion of worthy community enterprises

As part of the culminating activities of a unit of work, the students in a junior high school prepared and presented a program on the topic over the school radio station.[3] The members of the class made the decision that the program should be in the form of a round-table discussion. A class round-table was held. Questions were written by the class on the ten items they considered most important in the discussion. On the basis of their performance in the class exercise, a student chairman, three members, and three substitutes were chosen to present the radio program. In preparing the program the chosen members studied the combined notes of the class on the subject. They supplemented these notes by additional study and research on the topic and held several preliminary round-table discussions on which a secretary made notes on the sequence of the main points. From the secretary's notes and the written notes of the student members a radio script was prepared with the assistance of the teacher and presented by the students.

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[3] Described in a bulletin issued by the public school system of Portland, Oregon, in 1946.

Use of Sound Recording Equipment.—Recent technical developments have made recording devices practicable for school purposes. By means of the magnetic tape recorder, inexpensive direct recordings can be made, played back for study, and then erased, after which new recordings may be made on the same tape. Other equipment is available for recordings of a more permanent form.

Schools utilize these recordings in a variety of ways. In some schools, radio programs are recorded for later use. Teachers of music make recordings of the solo and group singing of their students and play them back to the students for analysis and study. Instrumental music work lends itself to similar treatment. The distorted impression which a student may get of the contribution made by his own voice or instrument in group singing or playing can be corrected by listening to the recorded version, and the class can make an objective diagnosis of their rendition of a musical composition. Teachers of speech have found recordings valuable for the diagnosis of students' speech defects. In many schools dramatic productions and programs of special local interest are recorded for their historical value.

Guiding Students in Out-of-School Radio Listening.—Teachers are becoming increasingly aware of the power of the radio to influence people's lives. The fact is generally accepted that the radio has become a great social force. Will it become an instrument in aiding man to achieve the good life or just another device for "pushing him around" by telling him what to think and what to buy, as well as whom to follow, whom to hate, and whom to fight? The answer to this question depends to some extent upon the ability of the millions of listeners to become discriminating, intelligent listeners.

Numerous studies of out-of-school activities of high school students reveal that radio listening constitutes a considerable portion of their leisure-time activities. The evidence is not conclusive, however, that these students are capable, without proper guidance, of choosing programs which possess the greatest potential value to them.

In a study conducted by Burkhard,[4] seventh grade pupils stated in response to a questionnaire in regard to their radio listening habits that they devoted from one to four hours per day to radio listening. Quiz, serial drama, and mystery story programs were their favorites. There was no significant difference between the preferences of boys and girls. The preferences of seventh and ninth grade children were somewhat different. Ninth grade pupils preferred quiz programs, plays, and music.

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[4] Russell V. Burkhard, "The Radio Listening Habits of Junior High-School Pupils," *Bulletin of the National Association of Secondary School Principals,* XXV, 45-48.

Some indication of the influence of the radio upon adolescents is contained in the results of a recent poll of student opinion. In a nation-wide survey [5] of the opinions of 101,548 high school students in regard to what influenced their thinking to the greatest extent, the students answered as follows:

Family	38.0 per cent
Magazines and newspaper	17.0 per cent
Close friends	11.5 per cent
Radio	10.5 per cent
Community and student opinion	6.0 per cent
School teachers	5.0 per cent
Church	5.0 per cent
Movies	3.0 per cent
Schoolbooks	1.0 per cent
Don't know	3.0 per cent

There is little gained from a teacher's merely condemning the programs to which pupils listen. He should be in a position to suggest more desirable programs. Any such recommendation, however, should be based upon an understanding of individual pupil's interests and tastes. Assignments can be made occasionally directing pupils to listen to significant radio programs at home and be prepared to discuss them in class. Radio plays, such as Maxwell Anderson's *Feast of Ortolans,* may be used as the basis of discussions in an American culture class. In order to give students some conception of the scope and variety of radio programs available, they may be requested to make a list of the different programs and personalities on the air for any given week. For example, during the week ending January 24, 1948, among the programs to which students in any part of the United States could have listened were the following:

PERSONALITY	TOPIC
Robert A. Taft	National affairs
Dean Acheson	International affairs
Ansermet	Conducting N. B. C. Orchestra
Bernstein	Conducting Boston Symphony Orchestra
Bruno Walter	Conducting New York Philharmonic Symphony
Kreisler	Violin selections
Joan Caulfield	Theatrical performance

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[5] Poll conducted by *Scholastic Magazine* as reported in *The Education Digest:* "Who Shapes the Thinking of High School Students?" in issue for March, 1946, on back cover.

PERSONALITY	TOPIC
Lionel Barrymore	Theatrical performance
Marcia Davenport	Fiction writing
James Melton	Songs
Drew Pearson	Comment on the news
Raymond Gram Swing	Comment on the news
Lowell Thomas	Comment on the news
George Hicks	Comment on the news
Jack Benny	Comedy program
Bob Hope	Comedy program
Stan Lomax	Baseball
Bill Stern	Comment on sports events
Clifton Fadiman	Information Please—quiz program
Quiz Kids	Quiz program

5. RECENT DEVELOPMENTS IN RADIO BROADCASTING

There are several developments in radio broadcasting which may have considerable significance for education. The four most important recent developments are frequency modulation, pulse modulation, facsimile, and television. Although the ideas underlying some of these are not new, recent adaptations and improvements in their use have increased their educational possibilities.

Frequency Modulation (FM).—Recently the Federal Communications Commission assigned five channels in the standard FM broadcast band for non-commercial education transmitters. Local school systems may apply for permission to erect and operate stations in the ultra-high frequency bands reserved for educational use. The costs of establishing and operating an FM station are considerably lower than on those owned by school systems in the past. The high fidelity of tone and virtual freedom from static which characterize FM make it well adapted for educational purposes.

While it is too early to estimate all the educational possibilities of FM at this writing, a few school systems and universities have established FM stations, and applications have been approved by the federal government for the establishment of several other school-owned broadcasting stations.

Schools which operate their FM stations have put them to a variety of uses. In some schools courses in radio script-writing and production have been added to the curriculum. Good books in their entirety are read over some of the stations. Nature study stories and musical programs have been widely used. Lessons in Spanish and dramatic stories of the people of Mexico and Central America have been broadcast to supplement the work of classes in Spanish. Programs of current events and narratives of local history have been used in connection with social studies classes. For English classes programs on vocabulary building and story-telling have been given. As part of the work in science and radio classes, students have installed, maintained, and operated the school's radio station. Guidance broadcasts have been a regular program feature of some of the schools. Adult education and public relations programs in which the work of the local school is interpreted to the people of the community, as well as broadcasts of local sports events, have been very popular.

Certain restrictions are imposed by the federal government upon the operation of school FM stations. No sponsored or commercial program may be transmitted nor may commercial announcements of any kind be made. The operating power may not be less than 100 watts nor greater than 1000 watts, unless a definite need for greater power can be shown. Educational broadcasting stations are not required to operate on a definite schedule or for a minimum number of hours each day.

Facsimile and Pulse Modulation.—Brief reference should be made to two other innovations in radio broadcasting. Facsimile may be referred to as "printed wireless." The light waves from words and pictures which are to be broadcast are picked up by a photoelectric cell, amplified, and transmitted over standard broadcasting equipment. In the receiving set the impulses are recorded as printed words or pictures instead of sounds.

Facsimile broadcasting can not only convey messages at a rapid speed, as in regular broadcasting, but also permits the making of a written record for further reference. In teaching by radio, there are instances in which a facsimile can contribute to understanding. In a music lesson, for example, a written musical score can make such a contribution, and so can maps in a newscast.

By means of *pulse modulation* many radio programs can be sent through one channel. When more completely perfected, pulse modulation may eliminate some of the overcrowding of the air as a result of the present necessity of assigning a different frequency to each broadcasting station. Less interstation interference and clearer reception would enhance the value of radio for use in teaching.

Television.—The advent of sight-and-sound broadcasting is of vital significance to education. It adds a new dimension to radio as a teaching aid in that a dual approach is made through the ear and the eye. The fact that sight, sound, and motion are combined gives television a quality of actuality possessed by no other teaching aid. Enthusiasts have suggested that television is likely to contribute to the development of the drama and the graphic arts as radio has aided in increasing interest in music. While television may make its greatest contribution in the arts, telecasts should make for far more effective learning of instructional materials in all areas of knowledge. Seldes[6] states, "The effect of reality that comes off the television screen is really tremendous . . . there is nothing that stands between education and the complete report of actuality which television can give."

The utilization of television awaits the establishment of television systems with anchor points in various cities. Since the range of television is about thirty-five miles, it also will be necessary to build in great numbers rediffusion stations to get reception in all parts of the country. The expense involved in the construction of television broadcasting stations is considerably more than for regular radio stations. Until the economic problems are solved, television will remain a potentially important educational instrument in many communities. Plans are now under study by the radio broadcasting companies to make television the "greatest medium of mass communication yet evolved."

Questions, Problems, and Exercises

1. What are the chief values of and limitations on the use of radio in teaching?
2. Suggest how the teacher of a particular high school subject, such as English, music, or the social studies, can make effective use of the radio in his teaching.
3. Why is the classroom better adapted to radio listening than the school auditorium?
4. How can the teacher promote discrimination in listening to radio programs on the part of high school pupils?
5. How can out-of-school radio programs be correlated with the high school course you plan to teach?
6. List the main advantages in the use of phonograph records in comparison with radio programs.
7. Suggest methods of measuring the learning outcomes of radio broadcasts.
8. What are the educational possibilities of student radio broadcasts in your teaching? Outline a plan for directing a student broadcast.

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[6] Gilbert Seldes, "Television in Education," *Radio and English Teaching*, pp. 48-49.

9. Prepare a brief statement on the value of FM and facsimile in education.
10. What are the factors which are retarding wider use of television in schools?

SELECTED LIST OF SOURCES OF INFORMATION ON AUDIO AIDS

(General publications on the subject are listed in the bibliography for this chapter appearing on page 605.)

Abbott, Waldo. *Handbook of Broadcasting.* (2nd Ed.) New York: McGraw-Hill Book Co., Inc., 1941, 424 pp. (Valuable for teachers interested in radio production.)
Barnouw, Erik. *Radio Drama in Action.* New York: Farrar & Rinehart, Inc., 1945. (Contains twenty-five plays for radio.)
Columbia Broadcasting System, Inc., New York. Teaching guides for radio programs in music, science, etc.
Columbia Recording Corporation, New York. Catalog of records.
Federal Radio Education Committee. *Radio Script Exchange Catalog.* Washington: U. S. Office of Education. (List of radio scripts available free or for rent.)
Federal Radio Education Committee. *Transcription Service for Schools.* Washington: U. S. Office of Education. (Educational radio script and transcription exchange; lists transcriptions which are available for loan or sale.)
Hubbell, Richard. *Television Programming and Production.* New York: Murray Hill Books, Inc., 1945, 207 pp. (Discusses problems of presenting programs by television.)
Kozlenko, William. *One Hundred Non-Royalty Radio Plays.* New York: Greenberg, Publisher, Inc., 1941, 683 pp. (Radio scripts for school use.)
National Broadcasting Company, New York. Teachers' manuals and schedules of programs.
R. C. A.-Victor Manufacturing Co., Camden, N. J. Catalog of records.

Audio Equipment

Educational Department, R. C. A.-Victor Manufacturing Co., Camden, N. J.
Ellinwood Industries, Los Angeles.
Fairchild Camera and Instrument Corporation, Jamaica, New York.
Popular Science Publishing Co., Audio-Visual Division, New York.
Presto Recording Corporation, New York.
Western Sound and Electric Laboratories, Inc., Milwaukee, Wis.
Wilcox-Gay Corporation, Charlotte, Mich.

Chapter 18

UTILIZING COMMUNITY RESOURCES IN TEACHING

In previous chapters of this volume, education has been considered as essentially a process involving significant social choices and consequences. Thus conceived, the educative process consists of the interaction of the child with his social environment. An individual's intellectual interpretation of the printed page is largely in terms of his past and present experiences with various social groups of which he is or has been a member and with the institutions and physical details of the communities in which he has lived. The impact of environmental conditions upon his attitudes and overt behavior is clearly discernible. Likewise his physical well-being is dependent in large measure upon environmental factors. These realities of his existence cannot be ignored in any educational program designed to contribute to his full development.

An individual's school experiences have meaning and significance to the extent that they are blended and fused into a unified experience. The community provides a considerable portion of an adolescent's first-hand experiential background and gives meaning to his vicarious experiences. It is essential to interpret a high school pupil's behavior and reactions against a background of community life.

The school's acceptance of greater responsibility for all aspects of a pupil's development and growth has made it imperative that the teacher understand and utilize the varied educational resources of the community in which the child lives. Never before in history has the individual been influenced as greatly by the larger state, national, and world communities as he is today. The impact of many of these conditions, however, can best be understood by relating them to conditions in one's immediate environment.

The Nature of the Community.—The political scientist defines the community as a political entity; the sociologist considers it as a socio-cultural unit. McClenahan refers to the community as the "inclusive area within which the major activities of a group of people take place."[1]

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[1] Bessie Averne McClenahan, "The Nature of the Community," in *How to Know and Use Your Community*, Department of Elementary School Principals, National Education Association, pp. 13-17.

In this chapter the community will be considered as the local area served by a school.

In every community, however small, numerous social processes are in operation. The community is the basic unit in the performance of many of the major social functions of life, such as making a living, securing an education, engaging in recreational activities, and pursuing religious interests. A first-hand study of the problems arising out of these processes in the community gives the adolescent an insight into other social needs. In seeking to achieve this social objective of the school it is imperative that our culture and its fundamental structure and problems become increasingly the integrating element of the curriculum.

1. Educational Values of Community Study

Since the community represents a significant aspect of the high school student's total environment, it appears that the appropriate point of departure for the study of our society is consideration of the significant problems of the adolescent's immediate social environment. The values of relating the program of the school to the community may be briefly summarized as follows:

1. Study of community life gives a realistic understanding of modern society and social processes.
2. Relating the curriculum to community activities develops an increasing awareness of and sensitivity to social issues and problems.
3. Utilizing the personal interests of the student in his immediate environment makes learning more meaningful to him.
4. Study of community conditions provides training in the scientific method of studying society.
5. Community study contributes to the student's sense of responsibility to society.
6. Community study serves to vitalize and enrich the curriculum by practical application to actual situations.
7. Community study contributes to the realization of one of the school's major responsibilities, namely, that of introducing youth to the life of their communities.
8. Study of community problems may become the antecedent for subsequent action to improve the quality of community life.
9. Community study counteracts isolation of the school from the realities of life, thereby enabling it to become a more effective agency of human welfare.

10. Community study fosters cooperation of individuals and agencies interested in making community life more wholesome.

Obviously the realization of these values is dependent upon intelligent selection and utilization of community resources. Students of curriculum construction in secondary education, seeking to reduce the social lag of education, have incorporated instructional materials pertaining to the community into core curricula and various other courses. Some curriculum committees have accepted the point of view that "the community is the curriculum." More conservative leaders in curriculum reconstruction, aware not only of the unique characteristics of each community but also of the common factors of living in all communities, have urged the adaptation of curricular materials to local community conditions. In the utilization of community resources and in student participation in community affairs it is essential that a proper balance be maintained with other educative activities.

The Community as an Educational Laboratory.—The utilization of the community as an educational laboratory is also in accord with principles of teaching which are basic to effective teaching procedures. A useful summary of the relationship between the principles of successful teaching and community-centered education is given by Olsen [2] as follows:

HOW TEACHING PRINCIPLES ARE UTILIZED IN COMMUNITY-CENTERED EDUCATION

Basic Principles of Successful Teaching at Any Academic Level	How Community-Centered Programs Utilize These Principles
I	
Educate the whole child. The child is not just a mind to be instructed: he is a physically, socially, emotionally, ethically, and intellectually growing person. If his powers are to develop in proper harmony, he needs learning activities which challenge his emerging interests and abilities in all the areas of his growth.	*Integrated learning occurs.* Well-planned community study projects necessarily involve not only intellectual understanding but, simultaneously, social poise, emotional control, physical activity, aesthetic response, and bodily skills. Pupils who explore a tenement house or a coal mine, for instance, develop all these aspects of the personality in unconscious integration.

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[2] Edward G. Olsen and others, *School and Community*, New York: Prentice-Hall, Inc., pp. 32-34.

from it, and retain that little briefly. Every effort should therefore be made to maintain learning situations wherein children will achieve genuine success, find personal satisfaction therein, and thus grow intellectually, emotionally, socially.

works, who aid in constructing a health exhibit for the county fair, or who help a neighboring farmer terrace his hillside can experience deep emotional satisfaction as well as increased intellectual understanding. Such projects bring feelings of success; success is satisfying; satisfaction brings increased enthusiasm; enthusiasm leads to further activity of the similarly creative and hence basically satisfying nature.

VIII

Let the curriculum mirror the community. Learning situations must reflect life in the pupil's own community if they are to be most effective. Since little transfer of training between diverse situations can be expected, it is essential that the core of the required curriculum directly reflect the basic social processes and problems of the community, rather than the logical subject areas of the traditional school, or the socially insignificant interest-units of many activity schools. Not otherwise will the curriculum relate functionally to the personal interests, experiences, and needs of young people today.

The community is used as a living laboratory. Within every community, large or small, urban or rural, go on the basic social processes of getting a living, preserving health, sharing in citizenship, rearing children, seeking amusement, expressing religious impulses, and the like. When pupils study familiar though actually unknown processes, develop intellectual perspectives, improve emotional outlooks and serviceable personal skills as they observe and participate in these processes, they are discovering for themselves not only the problems they face, but also the resources they can utilize in attacking those problems. Thus life, as well as the school, becomes truly educative in their eyes.

Types of Community Participation by Students.—The utilization of community resources in teaching involves more than the mere collection of the facts of community life by students. It includes intelligent, responsible participation in community activities. Five levels of student participation [3] may be identified, as follows:

1. Study of community conditions and problems by means of excursions, field trips, and surveys for the purpose of obtaining first-hand information. These may be initiated by teachers or adult

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[3] *Learning the Ways of Democracy*, Educational Policies Commission, National Education Association, p. 327.

leaders; for example, a recreational survey[4] initiated by the Denver Chapter of the National League of Women Voters was made by the students of five Denver high schools.

2. Programs of community action planned by adults and carried out by students; many of the metal and paper salvage drives during the war were of this type.
3. Community activities in which adults and youth share in planning and executing the plans, e.g., a campaign of traffic safety.
4. Student study of community conditions resulting in isolation of a problem for solution, consideration of methods of solution, and initiation action among adults; e.g., a study of zoning laws in the community, followed by recommendation to the city council for more definite housing regulations.
5. Rendering of a needed community service by students as a result of their study of community needs; e.g., the students[5] in the Holtville, Alabama, High School literally transformed the economic and social life of their community through their services to farmers and housewives.

Methods of Obtaining Information about the Community.—In order to gain a better understanding of their communities, high school students have used one or a combination of the following methods:

Community survey
School excursions and field trips
Interviews with local citizens and officials
School camps
Study of local records
Work experiences in local industries and other community enterprises

2. Types and Techniques of Community Surveys

Types.—Upon the basis of scope, community surveys may be divided into two classes: (1) broad, general surveys of community conditions to obtain a general overview of the community; and (2) the intensive survey of conditions in one area or source of trouble in the community.

Properly planned and conducted, both types of surveys have great educational possibilities. While the main purpose of a survey is to obtain information which is relevant for community understanding, its chief educational value is dependent upon the manner in which the information is related to other significant learning activities. This demands intelligent analysis and interpretation. Merely to assemble information by means of surveys without a definite objective is educational profligacy under the guise of progressiveness.

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[4] Florence S. Harper, "Students Make a Recreational Survey," *Educational Method*, XVIII, 279-289.

[5] Blake Clark, "'Know-How at Holtville," *The Rotarian*, LXVII, 17-18, 55-57.

In most cases the limited type of community survey in which data are obtained in regard to one community problem or area is the most suitable for high school groups. A definite problem or need which directly affects the pupils as members of a community, such as health, recreation, or racial discrimination, may well serve as the basis of an investigation. The problem is even more appropriate if it is such that the students can take definite action resulting in discernible community improvement.

Techniques-Preliminary.—The survey should arise out of the curriculum and return to enrich and vitalize it. The purpose should be clearly understood by the teacher and the students. The kinds of data and the methods of obtaining them should be determined by a process of democratic group planning. The students may be organized into various committees, and definite responsibility for some phase of the survey may be assigned to each committee. The committee findings should be reported to the entire class for evaluation and interpretation. The total results of the survey should be organized into an appropriate form for presentation to the class and interested adult groups.

To insure the maximum educational values, the actual survey should be preceded and accompanied by a study of library materials on the subject. The details of making the survey should also be carefully considered in advance. Plans should be made with due regard to the maturity of the students who are to participate as well as the probable reactions of the adult citizens of the community.

The Radford, Virginia, Example.—The teacher who is considering this type of community analysis or study will find helpful suggestions in the description of a survey made by the students in the Radford, Virginia, High School.[6]

> Radford, Virginia, High School is located in a small industrial city with a population of approximately 5600 whites and 600 Negroes. During the past two years, students in this school have started movements for the improvement of public recreation and public health—movements which grew

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[6] *Learning the Ways of Democracy,* Washington: Educational Policies Commission, National Education Association and American Association of School Administrators, pp. 292-293.

out of the needs of this community in the same way that campaigns for housing projects and better zoning laws grew from the needs of New York's Upper East Side.

The playground movement started in the fall of 1938 with the younger students, the ninth-graders, and their teachers. They were studying a unit on "Improving Urban Culture" and began to examine their own community. They found that Radford had no public playgrounds apart from the schools, and no supervision for playgrounds during out-of-school hours. So they invited the commonwealth attorney of the city to come to the school and discuss with them the possibilities of establishing a system of public playgrounds in Radford. With the aid of his suggestions, the class outlined the following steps and assigned a group of students to work on each:

1. Investigating present playground facilities
2. Estimating the amount of necessary equipment
3. Locating possible sites for playgrounds
4. Collecting statistics on juvenile delinquency and possible causes for it
5. Presenting the idea to the entire student body for approval
6. Issuing questionnaires to the leading businessmen on the need for a playground
7. Soliciting boys in school to give free help toward developing a suitable ground
8. Preparing a petition to be presented to the city manager and city council

All signed petitions and promises of work on grounds were presented to the city council in May 1939 by a spokesman from the ninth grade, supported by twenty-five students from all four high-school classes. The city manager selected a committee from the council to meet with a student group for further discussion and planning. The superintendent of schools assisted by presenting the proposal to clubs and civic organizations.

As a result of these efforts, the Community Chest set aside $500 toward paying the salary of a playground director, the city council passed an ordinance creating a recreation commission, and the commission appointed a playground director. The city council was also asked to help finance the costs. At the time of writing [1939], comprehensive plans for the program were being formulated by the director and the commission. Thus within a year the students had the satisfaction of seeing their idea approach realization.

General Community Surveys.—The information obtained by a survey of general community conditions may be used as the basis of studies of a great variety of topics in various high school subjects. In regard to general community surveys, Kilpatrick[7] has stated the following caution:

Community analysis must take one beneath the externals. It is not enough to know that there are farm children in the school; one must know the life of the farm. It is not enough to see the stores, factories, churches, and public buildings; the good teacher must understand what these mean for the lives of the people. To the fact that 1,000 people work in a textile mill must be added personal acquaintance with the life struggles of some of those employees. That there are ten churches in a small town is a fact without much significance, but the history of those ten cults, their leaders, achievements, internal dissensions, and competitive activities may reveal pretty clearly the strength and weakness of that community today.

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[7] William H. Kilpatrick, editor, *The Teacher and Society*, pp. 239-240.

The teacher and the class should collaborate in preparing a list of topics to be included in the survey. The outline of a general community survey prepared by Wesley[8] is a useful guide. As a culminating activity to the survey, the students may prepare a guide-book or write and present a pageant depicting the history and development of the community.

Institutional Surveys.—Among the outcomes of the general community survey may be the development of a desire on the part of the members of a class to make an intensive analysis and study of one or more community institutions. In the typical community there are several types of institutions suitable for special study by high school classes, for example, retail and wholesale businesses, factories, personal and professional services, social agencies and organizations, city and county agencies, cultural, educational, and religious organizations, and homes.

The factors which determine the choice of an institution for study are the classes of institutions represented in the community, the objectives of the curriculum or course, the adaptability of the institutional materials to the abilities of students, and the interests of students.

3. The Educational Excursion

Educational Values.—The school excursion, when utilized as a learning activity, is an effective method of providing direct experiences with the realities of social living. The educational purposes which may be served by guided school trips are the development of new interests and the intensification of old ones, the observation of objects and processes in their functional relationships, the clarification of concepts, the development of keenness of observation in particular fields, the supplementing and verification of information obtained from books and other sources, the illustration of abstract ideas, the enrichment and expansion of students' experiential background, and the acquisition of certain social abilities such as acceptance of responsibility and willingness to cooperate in group undertakings.

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[8] Edgar B. Wesley, *Teaching the Social Studies*, pp. 436-440.

Planning for Excursions.—Considerable preparatory work is essential if the time and expense involved in school trips are to be justified in terms of desirable educative outcomes. The process of cooperative planning and preparing for a trip by pupils and teachers presents an unparalleled opportunity for democratic living.

One of the first steps to be taken in planning a program of school excursions in larger cities is to make a community-wide survey of all available places of educational interest and value in the community. A central committee of teachers in each school should prepare a list of places appropriate for visitation. Individual members or subcommittees should then visit different places on the list to ascertain their educational potentialities. The information thus obtained may be recorded on cards to be filed in the school for reference.[9] Each card should record the following information:

1. Name of person, place, or thing visited
2. Location
3. Possible value of visit
4. Transportation needed
5. Time appropriate for visit
6. Name of persons to be contacted and necessary preliminary notification

A committee of pupils and the teacher in each class should be formed to examine the information on file, select trips appropriate to their class work, and report a tentative schedule of their trips to the central committee, which in turn prepares a schedule of trips for the entire school.

Each teacher who is to serve as leader of a group has the responsibility of making pupils cognizant of the educational implications of each trip. Reading materials, films, pictures, and discussions relating to the trip assist in orientation. Extreme care is necessary in planning the routine details of the trip—transportation facilities, time schedules, food, and liability insurance.

The trip should be closely correlated with the actual flow of instruction in the classroom. Classes functioning along student activity principles encounter little difficulty in expanding their units of work to include school trips related to the various units. Each trip should be followed by class discussions in which questions which arise out of the trip can be cleared up and significant facts emphasized. The information obtained by students on a school trip should be organized, synthesized, and presented in the form of oral or written reports to other school or adult groups, thus providing experience in oral and written English composition. Trips to rural areas may be correlated with the study of the poetry and fiction of farm life. Students may be inspired to express their reactions to the places visited by drawings and sketches, thereby using them as the basis of creative exercises in art. The work in the practical arts takes on added significance when students observe related activities in carpentry, masonry, and machine shop work in the community.

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[9] *Expanding the Classroom*, Harrisburg: Department of Public Instruction, Commonwealth of Pennsylvania, pp. 9-10.

Techniques of School Excursions.—The maximum educational benefits can be derived from a school excursion only when:

1. The students and teacher recognize the need for first-hand information in regard to a problem they are studying.
2. An appropriate excursion is carefully selected. The resources available for study on the trip should be closely related to the topic which the class is studying. The trip should be justified in terms of the probable contribution it will make to the students' understanding of a significant problem. The outcomes should be proportionate to the time required and the adjustments necessary.
3. The suitability of a proposed trip can be ascertained by a preliminary trip by the teacher and a committee of the class in which its educational possibilities are surveyed. In the event the excursion is made to commercial and industrial establishments or civic agencies, permission and cooperation must be obtained from the persons in charge.
4. On the basis of the information obtained on the survey trip, the details of the trip are planned by the class. In the group planning, consideration should be given to the length of the trip, the route, needed equipment, suitable clothing, the optimum number of students to be included, and the most appropriate time to make the trip. Different committees may be assigned definite responsibilities in regard to each of these matters.
5. The class is given full and explicit information in regard to the plans formulated.
6. By means of class discussions, students formulate purposes of the trip.

7. Student orientation and motivation are provided in advance of the trip by study of its educational significance. Pupils may be oriented by the assignment of readings and the use of films.
8. Necessary arrangements are made with the proper school authorities.
9. Students formulate directions for observation and prepare a list of standards of pupil conduct. A group of students before they make a trip agree to:
    - (a) Observe traffic laws on the trip
    - (b) Obey safety precautions in order to avoid accidents during visits to the places selected
    - (c) Obtain enough information in advance of the trip to enable them to ask sensible questions
    - (d) Follow suggestions of the guide or other person in charge
    - (e) Observe carefully and listen attentively to explanations given by the guide
    - (f) Make brief notes of observations
    - (g) Exchange ideas with each other
10. The trip is followed up by means of pupil appraisals, class reports, discussions, and the relation of information obtained on the trip to the problem being studied.

4. DOCUMENTARY MATERIALS AND INTERVIEWS

Documentary Sources of Information.—Information obtained by first-hand investigation may be supplemented by consulting written materials pertaining to the community. The United States Census Reports are a reliable source of data of a general character on population, housing, agriculture, and manufacturing. The records of state and municipal agencies contain more specific information relating to past and present community conditions. Local newspaper files contain an interesting running account of community activities. Social service and public health agencies may have records which are of value in the study of juvenile delinquency and health conditions in the community. Aside from the value of the information obtained from documentary sources, students under proper guidance may receive invaluable experience in the elementary techniques of research.

Interviews with Local Citizens.—Individual members of many high school classes interview persons engaged in various community occupations to obtain information in regard to general working conditions, duties and training of workers, and the like. Local public officials may be interviewed to obtain information in regard to current community issues and problems. Early inhabitants of the community may provide human interest materials for a study of local history.

5. CAMPS AND WORK EXPERIENCE AS AIDS TO EDUCATION

Significance of Camp Experiences.—In his *Émile,* Rousseau wrote, "Life is the trade I teach." Effective living in the world of today requires the development of cooperative skills in living and solving problems together. One of the major difficulties encountered by teachers has been that of integrating many portions of the school curriculum with the life experiences of students.

In boarding schools, an adequate opportunity is afforded for training young people to live together in a community under the direction of trained leaders. For pupils who do not attend boarding schools, summer camps and school camps afford to some degree a substitute and provide opportunity for a training which is different from and superior to any community experience available within the walls of a school building. Summer camps sponsored by schools, churches, commercial camp institutions, and philanthropic and social agencies have multiplied rapidly in recent decades and now reach several million young people annually.

In a school camp, children are placed in an environment favorable for learning to live together, to assume responsibility, and to explore source materials of the curriculum.

Planning Camp Educational Experiences.—Prior to the camping trip, the teacher and students should make tentative plans as follows:

1. Discuss reasons for camping
2. Plan the trip to camp, exploring interesting places en route
3. Study history of the camp area
4. Compile a list of articles the students will need at camp
5. Work out a tentative camp program

Plans should be made to insure that the pupils may participate effectively in such camp experiences as the following:

1. Getting acquainted with the camp area and the other campers
2. Observing trees, flowers, rocks, and birds in the area
3. Making things to be used in the area
4. Sharing responsibility for camp chores
5. Programs of an inspirational nature
6. Special exploratory trips

7. Evening get-togethers
    (a) Campfires
    (b) Songfests
    (c) Story-telling
    (d) Games
8. Leisure-time activities
    (a) Hobbies
    (b) Crafts
    (c) Swimming
    (d) Reading
    (e) Hiking
    (f) Dramatics

Among the more important types of educationally valuable follow-up activities are these:

1. Computing camp expenses
2. Writing letters of appreciation to camp officials
3. Class discussions of camp experiences
4. Plan to continue experiences begun in camp

There are many indications that camping is coming to be recognized as a vital educational experience for all children and youth. Notable among camp programs are those conducted by the schools of Atlanta, Georgia; Catskill, New York; Dowagiac, Michigan; and Los Angeles, California.

The teacher has an important role in promoting the development of the school camp movement. In the activities of the camp, the teacher serves as leader of his students and utilizes the camp counselors as resource leaders. Since the camp experience should be an integral part of the student's total educative experience, the teacher is responsible for assistance in planning, evaluating, and integrating the camp program along with that of the school.

The following criteria[10] are proposed for a good school camp:

School Camp Purposes and Philosophy

1. The school camp should have as its central objective, helping young people to understand the democratic way of life and to practice it in their relationships with others.
    (a) The school camp should treat each youngster as an individual. It should guide him, help him to face his problems, help him develop his potentialities, and open up new interests to him.
    (b) The school camp should help youngsters to live with others, giving and taking, sharing and accepting responsibilities, constantly learning to widen the area of shared interests through partaking in enterprises with others for objectives commonly agreed upon by the participants.

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[10] Adapted from *Toward a New Curriculum,* Yearbook, Department of Supervision and Curriculum Development, National Education Association, 1944, pp. 102-104.

(c) The school camp should stress problem solving involving the process of critical thinking.
(d) The school camp should teach youngsters to be concerned for human welfare, inside and outside the camp.

Programs to Achieve Purposes

1. The school camp should fully utilize its environment for educative ends, whether that setting be the field, forest, and stars of the organized out-of-doors summer camp, or the community setting of the work camp.
2. The school camp should teach social living and citizenship, using as the raw materials of education those situations and problems which arise in the everyday life of the camp. (Democratic values should be applied not only to the present camp problem which serves as the source but also to larger social issues related to the immediate problem.)
3. The school camp should involve camper and staff joint planning by campers and staff and cooperative conduct of the program.
4. The school camp should be an informal experience in which fun and joy are cherished and promoted.
5. The school camp should be a place where health and vigor are improved, where health, nutrition, and safety practices are taught by the demands of camp living, with direction by educationally alert adults.
6. The school camp should encourage and develop work experiences of a variety of kinds teaching the dignity of labor and the significance of shared responsibility in democratic living.
7. The school camp should continuously evaluate and appraise its program and periodically report its findings to interested groups.
8. While the school camp should fully utilize work experience, forest living, crafts, hikes, athletics, dramatics, and similar activities, it should not conceive its function to be that of a non-educative, non-intellectual agency devoted simply to recreation and physical culture.
9. While the school camp should fully utilize such activities as discussion, reading, forms of self-government, community visitation and study, speakers, radio and motion pictures, it should not conceive its function to be that of a non-social, non-emotional agency concerned with developing the mind of the child through the traditional curriculum centered on assuring college entrance for the few.

In short, the school camp may well become an integral part of the youngster's year-round educational experience, blending what is best in camping with what is best in schooling to foster democratic living.

Importance of Work Experience.—For more than a hundred years, and particularly in the past few decades, less and less opportunity has been available for young people to participate in purposeful, realistic work experience of the type in which adults engage. The most careful students of youth problems seem to be convinced that young people cannot develop the highest type of character and maturity without work experience and responsibility. They cite many examples of married young people in their twenties, often parents, whose sense of responsibility is yet undeveloped, and whose behavior is characteristic of teen-age children rather than mature people. To the lack of educative, maturing work responsibility, in the home or elsewhere, they attribute much of the relative inability of young people today to make satisfactory wives, husbands, parents, workers, or citizens. To this lack of work experience, along with parental overindulgence, they attribute not only the types of maladjustment and unpreparedness for adult responsibilities mentioned above but also the relatively high and increasing incidence of mental and emotional instability in young adults.

A half-century ago John Dewey called attention to the increasing need for society to provide more work experience in school and elsewhere to compensate for the relative disappearance of it from the home, from industry, and from business, where less and less opportunity is available for employment of children and youth. What he said is worthy of our attention today.

> Back of the factory system lies the household and neighborhood system. Those of us who are here today need to go back only one, two, or at most three generations, to find a time when the household was practically the center in which were carried on all the typical forms of industrial occupation. The clothing worn was for the most part not only made in the house, but the members of the household were usually familiar with the shearing of the sheep, the carding and spinning of the wool, and the plying of the loom. Instead of pressing a button and flooding the house with electric light, the whole process of getting illumination was followed in its toilsome length, from the killing of the animal and the frying of fat, to the making of wicks and dipping of candles. The supply of flour, of lumber, of foods, of building materials, of household furniture, even of metal ware, of nails, hinges, hammers, etc., was in the immediate neighborhood, in shops which were constantly open to inspection and often centers of neighborhood congregation. The entire industrial process stood revealed, from the production on the farm of raw materials, till the finished article was actually put to use.

Not only this but practically every member of the household had his own share in the work. The children, as they gained in strength and capacity, were gradually initiated into the mysteries of the several processes. It was a matter of immediate concern, even to the point of actual participation.

We cannot overlook the factors of discipline and of character-building involved in this: training in habits of order and industry, and in the idea of responsibility, of obligation to do something, to produce something, in the world. There was always something which really needed to be done, and a real necessity that each member of the household should do his own part faithfully and in cooperation with others. Personalities which became effective in action were bred and tested in the medium of action. Again, we cannot overlook the importance for educational purposes of the close and intimate acquaintance got with nature at first hand, with real things and materials, with the actual processes of their manipulation, and the knowledge of their social necessities and uses. In all this there was continual training of observation, of ingenuity, constructive imagination, of logical thought, and of the sense of reality acquired through first-hand contact with actualities. The educative force of the domestic spinning and weaving, of the saw-mill, the grist-mill, the cooper shop, and the blacksmith forge, were continuously operative.[11]

Purposes and Values of Work Experience.—One of the authors of this volume, when acting as consultant to the American Youth Commission, spoke of the values of work experience as follows:

1. It distributes the employment of youth more evenly.
2. It enables young people to earn enough money to keep them in school longer.
3. It is an opportunity to earn so that the less fortunate young people can improve their personal appearance and engage in the prevailing social activities for their age.
4. It enables young people to go to school better fed and thus to grow to normal adult health and physique.
5. It provides through employment a type of vocational education, without cost to the schools, which on the average is as useful as that which can be given by the schools and which will motivate the more general supplementary education.
6. Association on the job with adults encourages the normal maturation of adult interests and attitudes now retarded by reason of the segregation of youth away from all adults except teachers and casual contacts with their parents.
7. Many young people now leaving school at sixteen, seventeen, or eighteen might well afford to stay in school until twenty, twenty-one, or twenty-two, and profit more by studying some subjects at those later

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[11] John Dewey, *The School and Society*, pp. 22-24. Quoted with the permission of the publishers, University of Chicago Press.

ages, after having acquired an orientation in the adult world, than by completing all formal study by sixteen to eighteen before having acquired to any appreciable degree the adult point of view. This would be particularly true in the fields of economic and social problems, subjects, topics or discussions contributing to worthy home membership, applied science and vocational or business education.

8. The period available for guidance service of all types would be prolonged and the opportunity of the schools increased to assist in the safe establishment of young people in a respectable, honorable and satisfying adult life.
9. Vocational education might be deferred until young people know more definitely what type or field of vocation they are most likely to become permanently engaged in.[12]

Opportunities for Spreading Provision of Work Experience.—Organized work experience as provided for in the schools today falls into two categories, community service and vocational education. In vocational education circles it is most frequently referred to as "diversified occupations" or the "cooperative plan" of work experience. The number of schools employing it has increased greatly in the last dozen or so years. Douglass and Kornegay[13] reported in 1941 that in eight southeastern states the number of schools providing organized vocational work experience increased in the ten years between 1928 and 1938 from less than a score of schools to more than 300. In the George-Deen Act, passed by Congress in 1936, the diversified-occupation plan of work experience was recognized as a definite plan of vocational education which could be subsidized with federal funds. During World War II, partly as the result of the shortage of manpower, work experience programs came to be employed by thousands of schools.

Work experience has been employed for vocational education, but one should not lose sight of its values, utility, and possibilities for other aims and purposes of education and in connection with other types of subject matter. It may provide background and materials for understanding and correlation of instruction in English literature and composition, science, mathematics, industrial arts, business subjects, music, art, and household arts. Instruction in these subjects may be based upon and to some extent correlated with the learning resulting from work experience.

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[12] Harl R. Douglass, "Youth, School, Work and Community," *School and Society*, L, 69-70.

[13] Harl R. Douglass and Alonzo Kornegay, "Diversified-Occupations Plans of Vocational Education," *Industrial Arts and Vocational Education*, XXXI, 288-289.

The teacher may wisely draw upon the concepts, understandings, information, and (sometimes) skills which result from work experience from association with adults and adult ideas, ideals, and modes of thinking and behavior, and from the specific vocational activities and situations. He should also seek to identify and exploit the *interests* generated by work experience and association with adults. Better compositions, oral and written, may grow out of work experiences and the resulting interests and orientation, and similar improvement may occur from time to time in learning activities in almost all subjects. In addition, attempts should be made to utilize work experience as the means of explaining and demonstrating the usefulness of subject materials in school and as practice situations for the development of skills in application of subject materials.

Organization and Administration of Work Experience.—If work experience is to be most effective as learning experience, definite plans must be followed for insuring educational results, as experience with diversified occupations has clearly demonstrated. The most important of these are briefly summarized below. For detail the reader is referred to some of the more complete and technical discussions of vocational education through work experience.

1. The employer and the school coordinator must agree and see to it that the experience shall be as educational as possible and that efforts are made to insure learning beyond that resulting automatically from work. For example, principles, rules, and the less easily observable things to be learned should be pointed out to the learner and he should be provided with a variety of work experience over and above mere routine.
2. The pupil must be assisted in acquiring the attitudes of responsibility for high-quality service and for learning all he can from his work experience.
3. The work situation must be made realistic and practical. For example, the learner must be paid a wage corresponding to the market value of his work.
4. A representative of the school must supervise the work experience to see that:
    - (a) The foregoing objectives are realized
    - (b) The learner is instructed in such a way that the maximum learning will result from his work experiences
5. The learner's class work in all subjects should be correlated as far as possible with his work experiences and related responsibilities and interests.

Because many of these principles have not been observed, work experience under school guidance has not been nearly as educative as possible and in some schools has been little more than exploitation of child labor under the guise of education.

6. Using Community Resources in Teaching High School Subjects

The selection of community resources for use in school should be made in terms of very definite educational purposes. The value of relating the work of the school to community life as a method of enriching the curriculum and motivating pupils has been emphasized in previous sections of this chapter. The use of community resources has, however, a broader implication. If, through contact with the community, teachers are able to instill in pupils the recognition of community problems along with a desire and a plan to improve conditions, one of the major objectives of education, namely, *social* sensitivity, will be achieved.

Ideally the information gained from various subjects and from observation of the community would be fused and utilized in the study of any problem. In schools in which the curriculum is still divided into separate subjects, however, teachers have been able, within the boundaries of each subject, to utilize various community resources in an effective manner. The first requisite for the successful utilization of community resources is for the teacher to know the interests, activities, and study materials of the local community. The teacher can obtain information in regard to these matters through articles in the local newspapers, conversations with citizens, observation of community activities, and participation in community life.

Increasing Teacher Orientation.—In smaller villages and cities, and also in larger cities where city-wide inventories of available resources of out-of-school educational materials have not been made, the individual teacher should make such an inventory for the subjects he teaches. In doing this, it is recommended that he employ the cooperative efforts of the pupils in his classes, using as the criterion the value of the contribution to educational needs and the purposes of each subject.

While the number and type of resources available vary from one community to another, any community has numerous materials which can be used in different subjects. The amazing thing, however, is the apparent lack of consciousness on the part of many teachers that such educational opportunities exist in their immediate environments.

Many teachers are handicapped by not having readily available suggestions of resources which can be used in constructing school activities around community topics. A valuable in-service education program for teachers is one such as was carried on in Des Moines, Iowa, where interested teachers and community leaders compiled a list of resources which could be utilized in various areas of activity.

In many schools teachers have planned community excursions for the purpose of becoming better acquainted with their local environment and listing materials which might be made available for classroom use.

Variety of Approaches.—The techniques of using community resources vary considerably. Many materials gathered in the community may be brought into the classroom. Among these are exhibits and visual aids. Speakers from some community organizations may be invited to the school. Frequently it is necessary to send individuals, committees of the group, or the whole group for interviews and observations. Such activities generally are called "excursions." Unless the entire group goes, the excursion demands the sharing of findings with all members of the class through reports and the utilization of pictures, charts, and graphs.

Another way to study community resources is to have the children draw a map of the city, using a color chart in which different colors represent such things as public parks and recreational facilities, industrial plants, schools, churches, libraries, post offices, municipal buildings, courthouses, and other points of interest.

In connection with the use of community resources, care should be taken to employ only those which seem to have the greatest direct bearing on the problem in hand.

Teachers[14] representing thirty high schools of varying sizes were asked to list the uses of community resources in the subjects they taught. They suggested the following list:

Art

1. Airport	Functional design
2. Art gallery	Painting, sculpture, history of art, etc.
3. Churches, public buildings	Architecture, murals

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[14] Members of a graduate course in high school methods at the University of Colorado, Summer, 1947 (H. H. Mills, instructor).

4. Commercial artists	Studios
5. Department stores	Window displays
6. Gift shops	Arts and crafts, applied arts
7. Photographers	Choice of subject, composition, etc.
8. Public parks	Landscape design
9. Theaters	Stage design

Biology

1. Wild flowers for collections
2. Insects for collections
3. Identification of trees
4. Leaves for collections
5. Dispersal of seeds by wind, animals, and water
6. Fish (identification, habitat, etc.)
7. Amphibians (frogs, salamanders)
8. Reptiles (snakes, horned toads, turtles, lizards, etc.)
9. Birds (identification, habit, calls)

Commercial Work

1. Visits from representatives of office equipment companies
2. Visits to business institutions, e.g., banks, factories, insurance offices, stores, etc.
3. Visits to business and professional men (discuss qualifications for secretaries and other office workers)
4. Part-time employment in offices
5. Visit to local chamber of commerce (information in regard to local business conditions)

English

1. Newspaper	Printing shop, news and editorial offices
2. Radio station	Broadcasting, dramatics
3. Theater	Play production, motion pictures
4. Public library	Book displays and reviews, supplementary reading
5. Persons interested in	Poetry, reading, story-telling, colorful local legends
6. Business offices	Business letters
7. Local industries	Information for oral English reports

General Science

1. Health department and health laboratory	Provide literature, charts and diagrams, and speakers upon request to aid in teaching Health Education unit
2. Tuberculosis clinic	
3. Hospitals	

4. Fire department .... Provide conducted tours upon request
5. Water department .... Provide speakers on fire prevention
6. Sewage disposal plant........... Precautions against spread of disease by water, air, and insects
7. Museum .... Conducts field trips (flowers, birds, rocks); has an extensive library of visual aids
8. Parks are numerous and well supplied with a variety of plant and animal life indigenous to the region
9. Coast guard station and weather bureau (federally owned, but partially locally supported); have numerous weather measuring and forecasting devices; give practical value and motivation to related teaching by posting flags and permitting students to read instruments and interpret readings
10. Harbor presents opportunity to observe interesting transportation relationships (grain, ore, cars)
11. Airport presents possibility of ground instruction in principles of buoyancy, stability, and unbalanced air pressure under more convincing instructors than teachers (fighter pilots, navigators, etc., who frequent the airport); provides excellent practical motivation and vocational guidance
12. County agricultural agent—speaker on all phases of conservation
13. State university library of films available to the schools of the state
14. Privately owned public utilities
    - (a) Electric light and gas company presents in its demonstration hall films and experiments for the public (these are announced in advance, so teachers can prepare their students)
    - (b) Telephone company—field trips; source of information on rates
    - (c) Transportation lines provide transportation for field trips
15. Clubs
    - (a) Conservation
    - (b) Garden
    - (c) Camera

      Provide speakers, films, exhibits on request; conduct shows, displays, to stimulate vocational and avocational interest
    - (d) Boy Scout First Aid Corps provides speakers and demonstrations applicable to safety and health

Home Economics

1. Frozen food lockers
2. Meat markets
3. Grocery stores
4. Lunchrooms of the school
5. Clothing stores
6. Homes and day nurseries
7. Red Cross and home demonstration workers

8. Creameries
9. Bakeries
10. Flour mills
11. Meat-packing houses
12. Canning factories

Latin

1. Pharmacist and physician	Discuss Latin terms used in their work
2. English teacher	Tell of Latin words used in English
3. Returned service man	Describe his trips to Rome during the war
4. Local architecture	In study of Roman architecture
5. Art museum	Study of Roman art
6. Local courts	Comparison of Roman law procedures with those of present day
7. Local chamber of commerce	Obtain state seals with Latin inscriptions upon them and translate Latin into English
8. Homes	Everyday products used in homes which have names of Latin origin

Mathematics

1. Make mathematics meaningful by showing how it can be fundamental to the beautification of school and home grounds; measurements of walks, hedges, fences, and buildings and recording of this information on scale drawings will lend realism to the world of numbers
2. In some rural areas the interest of some boys in solid geometry may be aroused by the study of the honeycomb—volume, dihedral angles, etc.
3. Make a trip to the local airport, where competent instructors will show the various instruments, outline their principles, and thus bring to the fore a realization of different types of measurement as well as the need for accuracy in computation; this will be especially true in a discussion of navigation problems
4. A twofold objective may be achieved by studying gambling machines: here is a chance to make concrete the laws of probability; it may also tend to discourage young people from tossing away money when they prove that "You can't win"
5. Inspection of automobile lights at a garage will teach how speed affects distance in stopping and how elevation of headlight affects area of beam; these in themselves may be physics problems, but they utilize the study of formulas as well as illustrating social responsibilities in driving
6. Talks by professional men such as engineers, insurance men, and bankers on the role of numbers in their particular work will help to show the everyday applications of mathematics in various phases of community life

7. Conservation, whether it be a study of the effects of erosion and floods or the value of garbage, offers limitless areas for relating the problems of collecting and evaluating statistical data to community service
8. Get catalogs from mail-order houses and make out orders to give practice in considering quantity, quality, size, mailing charges, and methods of payment—all mathematical usages which will be common in adult life
9. A visit to a lumber yard will afford an opportunity to learn what computations are made in selling building materials
10. Most homes have a gas or an electric meter or both; visits to electric plants and keeping a record of meters at home will be valuable experiences that many adults do not understand

Music

1. Folk music of nationalities represented in the community
2. Community pageants
3. Utilize physical facilities of community for musical program, e.g., band shells, churches, city auditorium, etc.
4. Local music stores
5. Local citizens with musical ability
6. Community library—literature on music

Physical Geography

1. Rivers, lakes, hills, mountains
2. Rock strata
3. "Red rocks" [local geologic formation]
4. Sandstone
5. Granite tombstone (igneous rocks)
6. Marble tombstones (metamorphic rocks)
7. Soil
8. "Antelope hills" [local geologic formation]
9. Native rocks
10. Petrified wood
11. Stars (night star-gazing trips)

Physical Education

1. City parks and playgrounds, tennis courts, golf courses, community center buildings
2. Municipal swimming pool
3. Members of community who are skilled in golf, tennis, baseball, etc.
4. Physicians can give valuable information and advice to health and physical education classes; trained Red Cross workers can supplement first-aid instruction
5. Lake in the vicinity is useful in school's recreational program; skating, boating, and ice games may be pursued

6. Schools located near the ocean may engage in activities and sports such as swimming, beach volleyball, and water relay games

Social Studies

1. Communication facilities—radio broadcasting, telephone exchange
2. Cultural heritage—art institutes, musical concerts, etc.
3. Educational institutions—library, museums, etc.
4. Government agencies—county courthouse, city hall, penal institutions
5. Health agencies
6. Historical sites of early homes, historical shrines
7. Housing projects, slum areas
8. Places of current social significance—irrigation projects, soil erosion control, etc.
9. Public welfare agencies, old people's home, etc.
10. Transportation companies—airport, docks, railway stations

Questions, Problems, and Exercises

1. To what factors do you attribute the increasing use of community resources in high schools?
2. Suggest a list of criteria which should be used in selecting community resources for study in a high school course.
3. Present arguments for and against the school's assuming responsibility for improving present community life.
4. A major problem in utilizing community resources in teaching is that of coordinating them with other curricular materials. Select a community resource and describe how it can be related to the subject you teach.
5. Outline a community service project in which it might be feasible for high school pupils to engage.
6. How may a teacher appraise the educational value of an excursion which his class has made?
7. What contribution can educational films make to a study of local community life?
8. Outline a community survey to be made by a high school class.
9. Describe in some detail the methods of utilizing a community resource in your teaching subject.
10. What factors should be considered before taking a class to observe an industrial plant, coal mine, or museum?
11. Survey the possibilities for more effective work experience in your school and community.
12. What are some of the differences to be recognized in making a general community survey in the rural area and in the urban community?

Chapter 19

ADAPTING INSTRUCTION TO THE INDIVIDUAL

1. Teaching the Individual

Learning is an individual matter. Although an instructor may "teach" a class, the *learning* is done by the individual. Beyond the minds of the separate individuals in the group, there is no *class* mind capable of learning. The teacher should not make the serious mistake of assuming that all, or any two, individuals in the class learn alike from the same instructional materials or instructional activities. It is unfortunate that there is not a better device by means of which teachers can see in detail the variety of learnings, with respect to both nature and amount, that take place among twenty or thirty pupils in a class who have had practically identical educational stimuli.

For a variety of reasons, such as the differences in previous experiences, in interests, and in apperceptive basis in general, the learning that takes place varies far more greatly than most teachers realize. What actually takes place is somewhat like what takes place in a demonstration sometimes performed in classes in chemistry. The demonstrator pours some liquid from a beaker into each of a number of test-tubes in a rack, each of which is partly filled with a liquid different from that in the others. As a result there is a precipitate of brown in one tube, green in another, yellow in another, and so on. In other words the result is determined as much by what is in the tube as by what is poured into it.

The Successful Teacher Focuses upon Individual Growth.—The teacher, therefore, if practical and effective, focuses his attention upon the learning actually taking place in the individual pupil rather than upon his teaching materials and activities. He must not only concentrate upon the individual, but as a means to producing the desired growth and learnings he must acquire a great deal of knowledge about each individual, his capacities, interests, and background.

The superior teacher keeps in mind the growth of the entire individual. He not only attempts to produce desirable growth in ideals, attitudes, concepts, understandings, and interests as well as in knowledge of accepted facts; he also thinks constantly of the possible or probable by-products—concomitant outcomes. The superior teacher is always aware of his responsibility in guiding the all-round growth of a number of *individuals.*

TABLE 2

NUMBER AND PER CENT OF SECONDARY SCHOOLS EMPLOYING VARIOUS DEVICES AND PROCEDURES * IN ADAPTING INSTRUCTION TO THE INSTRUCTED

Provision	Use	
	Number	Percentage †
1. Variation in number of subjects a pupil may carry	6,428	75
2. Special coaching of slow pupils	5,099	59
3. Problem method	4,216	49
4. Differentiated assignments	4,047	47
5. Advisory program for pupil guidance	3,604	42
6. Out-of-school projects or studies	3,451	40
7. Homogeneous or ability grouping	2,740	32
8. Special classes for pupils who have failed	2,612	30
9. Laboratory plan of instruction	2,611	30
10. Long-unit assignment	2,312	27
11. Project curriculum	2,293	27
12. Contract plan	2,293	27
13. Individual instruction	2,145	25
14. Vocational guidance through exploratory courses	1,911	22
15. Educational guidance through exploratory courses	1,900	22
16. Scientific study of problem cases	1,343	16
17. Psychological studies	1,077	12
18. Opportunity rooms for slow pupils	946	11
19. Morrison plan	737	9
20. Special coaching to enable capable pupils to "skip" a grade or half-grade	726	8
21. Promotion more frequently than each semester	686	8
22. Remedial classes or rooms	593	7
23. Adjustment classes or rooms	544	6
24. Modified Dalton plan	486	6
25. Opportunity rooms for gifted pupils	322	4
26. Restoration classes	191	2
27. Dalton plan	162	2
28. Winnetka technique	119	1
29. Other	101	1

* A number of these are discussed in various chapters in this volume. Others are discussed in some detail through the latter half of this chapter.

† To nearest round figure. Numbers and percentages today would probably be slightly different.

From R. O. Billett, *Provisions for Individual Differences, Marking, and Promotion,* National Survey of Secondary Education, U. S. Office of Education, Bulletin 17, Monograph 13, Washington: U. S. Government Printing Office, p. 9.

Devices Employed.—In the National Survey of Secondary Education, schools reported more than thirty different provisions for adapting instruction to the individual as being employed with at least some degree of success. Those reported most commonly are shown in Table 2. The Research Division of the National Education Association reported in 1943 that, in more than 90 per cent of high schools, provisions for pupils who learn slowly differ in some respect from those made for pupils of average ability.

2. NATURE AND EXTENT OF VARIATION AMONG HIGH SCHOOL STUDENTS

For the purpose of organizing the learning materials and procedures in the high school class, it is necessary to have an abundance of knowledge about the individuals who compose it. They will vary one from another in very important respects.

General Learning Capacity.—As is obvious from the dispersal of scores in all measures of the capacity to learn, there will be found in almost every high school class of a score or more students a few who can learn very much more difficult materials and can learn much more rapidly than the remainder of the class. There will be in a typical class some who cannot acquire certain learnings, while others in the same class can acquire them rapidly.

Since practically all boys and girls stay in school until they are 16 years of age, and all but a few of them are promoted a grade every year, the range of brightness as measured by the intelligence quotient is practically as wide in grades 7, 8, and 9 as among people in general, and not materially less in grades 10, 11, and 12.

The mental age of students in a typical ninth-grade class varies in its lower ranges from less than the average M.A. of a typical sixth-grade class to a figure less than that found in the best 10 per cent of fourth-grade children. In the upper ranges there will be some, perhaps 10 or 15 per cent, who will have mental ages greater than the average mental age of a typical twelfth-grade class.

Specific Aptitudes.—High school pupils also vary significantly in their capacities or aptitudes for learnings of various types. This is particularly true with respect to aptitudes for art, music, mechanical skills, public speaking, foreign languages, and mathematics. To be sure, much of what is assumed to be a difference in specific aptitude is really a difference in attitude, interest, and previous preparation, but for practical purposes of learning, the differences are very significant whatever their causes.

Previous Learning.—Partly as the result of differences in general capacity to learn and in specific aptitudes and attitudes in a particular field, the members of any high school class have widely different backgrounds in that field. In English classes some have a much better than average foundation in vocabulary, grammar, and language and much more advanced interests in literature. In ability to read, differences have become so great as to call for the establishment of special classes for those with least ability, even in senior high school. Variability of similar importance for learning exists in all other fields, particularly in mathematics and in classes in foreign language beyond the first year.

As the result of difficulty of learning in preceding grades, many young people have by the time they reach high school developed attitudes of fear, insecurity, and dislike for certain fields of school learning, and some have a dislike for all fields. Others—probably because of much happier experiences—have developed feelings of interest, confidence, and belief in the value of learning. These differences necessitate different treatment and teaching procedures for different individuals.

Temperament, Disposition, and Emotional Balance.—Both for purposes of effective instruction and for purposes of management and discipline, to say nothing of the purpose of assisting boys and girls to develop sound, healthy personalities, the teacher must adapt his procedures to the individual. Once it was believed that fairness and justice called for standard procedures of discipline and instruction. Now we know that "what is one man's meat may be another man's poison."

Young people differ significantly in such qualities as sensitiveness to criticism, tolerance-intolerance, contentment-worry, tranquillity-irritability, impulsiveness-indecision, optimism-pessimism, steadiness-emotionality, stability-changeability, and other factors that determine their responses, to various stimuli such as praise, blame, marks, and commands. These differences go far to explain differences of behavior in learning situations. Some are natural leaders, others natural followers. Some do much better if they have a large part in planning their own learning activities; others, equally bright or equally dull, respond better if specific assignments are given to them ready-made.

In the management of discipline cases and in the interpretation of unusual or unacceptable behavior much more effective solutions can be arrived at if the teachers know the individual pupil and his traits well than if they have not acquired such knowledge. Parents of several children almost invariably have discovered that effective management and rearing involve differentiated treatment based upon differences among the individual children.

Interests and Industry.—Not only will learning depend upon the degree of interest in learning and in learning activities, but as a matter of fact the degree to which the learner will participate in learning activities depends upon the degree of his interest in the particular area. Interests depend largely upon the extent, pattern, and character of previous experiences. They depend upon the nature and pattern of interests of parents, of other adults known to the learner, and of his companions. While it is one of the most important services and responsibilities of the teacher to develop desired interests—e.g., in public affairs, in good literature, in physical and mental health, and in other peoples of the world—he must also recognize the pattern of interests in the individual learner as they exist at the time and adapt instruction somewhat to them, harnessing those interests in order to insure wholehearted, effective participation in learning activities.

One of the authors of this volume remembers very distinctly the case of a youngster who would hardly try to express himself in class, either orally or in written compositions, until one day when he undertook to tell the teacher about coal mines, a subject in which he was very well informed and interested and about which the teacher knew little.

Future Needs.—Perhaps one of the most significant types of differences in many learners is their variability with respect to their present and future needs. Today there are in high school, and more often than not in the typical high school class, young people who will become well-to-do and others who will live at very low economic levels. Some will graduate from college, and others will not complete their high school education. Some will live in cities, and others in rural communities.

It is not always possible to predict accurately who will belong to each of these categories, but perhaps half of the entering ninth-graders can be identified with considerable accuracy as those who will not go to college; will go into agricultural, semi-skilled, or unskilled labor or into domestic or low-grade clerical vocational occupations; will live at the lower economic levels, doing most of their own housework and repair; and will find their lives in the relatively inexpensive and lower-grade leisure and cultural classes. The educational needs of these are quite different from those who will receive much more formal education, be less dependent upon getting the most out of every dollar, have others do most of their domestic work, and generally live in a higher-level atmosphere.

Variable Factors.—In addition to the differences discussed in the foregoing pages, learners respond differently at different times and under different circumstances to essentially the same educational stimuli. It is most probable that these variations are the result of one or a combination of the factors discussed above, but the teacher may be unable to explain the variation in terms of what he knows about the individual learner. In fact, the teacher may not even be aware that an unexpected learning response actually occurred. Because of the unforeseeable influences on learning, the teacher must be constantly on his guard to check on the more important outcomes expected and to see that the desired learning is actually taking place. In some cases, reteaching is necessary; in others, more time must be allowed. Discussion of possible procedures will be found in the latter part of this chapter.

3. Acquiring Information about the Learner

Upon assuming the responsibility for guiding the growth of a class of high school youngsters, the teacher should (1) acquire at once a body of data relative to the more pertinent aspects of their individualities, (2) continue to study them, to learn more about them, and to record additional knowledge of them, and (3) continually adapt instructional materials and management of learning to what is known about them. The types of knowledge about individual learners fall into several broad general categories.

Information Concerning Abilities.—In the large majority of secondary schools tests of general mental ability are given and results are recorded for each individual. As a measure of brightness the intelligence quotient is a useful but not infallible measure. If more than one I.Q. is recorded, it is wise to rely upon a figure slightly in excess of the average of those recorded. The higher figure is more likely to represent the individual's capacity than the average.

The mental age is a measure of general mental ability. It increases with age in proportion in general to the I.Q. As an indication of what a learner is capable of doing, especially in subjects involving vocabulary and verbal learning, the mental age is the best single measure. It should be modified slightly up or down by taking into consideration the degree of difference between the I.Q. and 100. For example, in the case of two learners each with a mental age of 15.5, one with an I.Q. of 115 may be expected to do better work, especially in dealing with abstract and verbal material, than another with an I.Q. of 95. It should also be remembered that, if the test was not given recently, those with higher I.Q.'s will have increased proportionately in mental age.

In many schools tests of special aptitude are given and the scores are available. Aptitude tests in mathematics and foreign language are especially useful. Care must be exercised in interpretation of these scores. The best single basis on which to forecast what a learner will actually do in a subject is his previous school marks. In addition to capacity, they measure in a rough way the factors which generally make for achievement, such as interest, industry, promptness, and cooperation. In interpreting marks and test scores, teachers should think of them in terms of relative standing in the class and of the general quality of the class, as well as in absolute terms.

Information Concerning Interests.—Data relative to interests may be available from a number of sources: interest inventories, choice of electives, hobbies, extracurricular activities, out-of-school experiences, statements made in class, and plans made for vocation and for further education.

Following is a form of the type most commonly used to obtain an inventory of the learner's interests.

Sections from an Informal Blank Devised for Identifying Interest under the Direction of Dr. William G. Brink of Northwestern University [1]

Interests of High School Students

Boy...... *Girl*...... *Age: years* .... *months*......
Grade...... *High School* ....
Teacher .... *Date* ....

To the Student: Your teachers would like to obtain some information about your interests. They believe that such information would be of great value to them in making your high-school life more enjoyable and profitable to you. Will you, therefore, answer *frankly* and *truthfully* the questions listed below? Answer *only* those questions that will give a clear picture of your interests. You may do this with the assurance that your answers will be kept strictly confidential and will have no bearing on your grades in any subject. You need not sign this report.

1. (a) What sports do you like to watch? ....
....

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[1] Shirley A. Hamrin and Clifford E. Erickson, *Guidance in the Secondary Schools,* New York: D. Appleton-Century Co., Inc., pp. 101-106.

(b) Name any sport that you have not seen that you would like to see....
....

(c) What team games (of 5 or more persons) do you play?...........
....

(d) What games (1 to 4 persons) do you play?......................
....

(e) In what other athletic activities do you engage?.................
....

(f) Is there any sport in which you have not taken part, in which you would like to be a participant?................................

2. (a) Have you made any collections within the past two years?..........
....

[Sections (b) to (f) omitted]

3. (a) Do you read a daily newspaper? Regularly ... ; occasionally ... ; seldom, if ever....

(b) What parts of the newspaper do you enjoy most? (Place a *1* after the part you enjoy most, a *2* after the part you enjoy second best, etc.) World news ... ; local news ... ; news about war ...; editorials ... ; the comics ... ; sports....

[Sections (c) to (e) omitted]

4. (a) Do you read any magazine? Regularly...; occasionally...; seldom, if ever....

(b) Which magazines do you read at home?.........................

(c) Which magazines do you read at school?........................

(d) What types of articles and stories do you like best? (Rank them as you did above.) Love stories ... ; adventure ... ; travel ... ; sports ... ; detective ... ; science ... ; technical ... ; politics ... ; current news ... ; religion ... ; arts....

5. (a) Do you enjoy reading books just for pleasure?..................

(b) What types of books do you like best? (Rank the following types according to your interest.) Travel ... ; science ... ; sports ... ; religion ... ; poetry ... ; humor ... ; biography ... ; adventure ... ; drama ... ; romance ... ; mystery ... ; art ... ; music ... ; history ... ; homemaking ... ; aviation ... ; personal appearance ... ; politics ... ; etiquette....

[Section 5(c) and Division 6 omitted]

7. (a) Name the occupation or occupations which you are interested in entering upon after you will leave school. (List them in the order of your preference.) ....

(b) For how long have you held the idea of your first choice?..........
....

(c) Do you intend finishing high school?..........................

(d) Do you intend going to college?..............................

(e) When you have several hours in which to do exactly as you please, what do you like to do most? (List in the order of your preference.)
....

(f) Are there things you like to construct, make, or build? (For example, knitting a sweater, constructing an engine, etc.)............
....

(g) Check no more than 3 of the following activities in which you have great interest: Playing a musical instrument...; acting...; dancing...; drawing...; speaking...; modeling clothes...; homemaking....

[Division 8 omitted]

9. (a) Do you go to parties at the home of your friends as often as (check) once a week?... once a month?... very seldom?...

(b) What do you do for amusement at those parties in a friend's home? (Check.) Play games...; dance...; play cards...; other ....
....

(c) Do you have a better time at parties attended by (check) people whom you know?...people whom you do not know?...

(d) Check any of the following which you think "spoil" your good time at a party: Not knowing many of the guests...; wrong kind of clothes...; not knowing how to meet people...; not knowing what to say to people...; not enough refreshments....

(e) Where do you have the best times? (Check not more than five.) On a hike...; at games...; at parties...; at the movies...; at school socials...; on a date...; riding...; roller-skating...; dinner dances...; tea dances...; meeting celebrities...; giving a party of your own...; other ....

(f) Do you have better times with people your own age? (Yes...; no....) people younger than you? (Yes...; no....) boys? (Yes...; no....) girls? (Yes...; no....) boys and girls? (Yes...; no....)

(g) Do you ever listen to talks on the radio? Yes...; no....

(h) If you listen to talks on the radio, what kind do you listen to?......
....

(i) What kind of music do you enjoy?.............................

(j) Do you sing? Yes...; no....

(k) If you sing, do you sing alone? (Yes...; no....) in a group? (Yes...; no....)

(l) Do you play a musical instrument? Yes...; no....

(m) Have you studied music outside of school? (Yes...; no....) If you have, how long?.....................................

(n) Which of the following do you think are most important to success? (Number in order of importance.) Health...; charm...; cleanliness and neatness . . . ; good looks . . . ; clothes . . . ; figure . . . ; disposition. . . ; manners. . . ; other. . . . .

[Division 10 omitted]

Since interests change markedly over the years and new interests, even those of impelling nature, often develop quite suddenly, the data relative to interests should be kept up to date.

Character and Personality Traits.—The practice of giving and recording a personality inventory is spreading among secondary schools. These inventories furnish rough measures of such qualities as relative seriousness, frankness, steadiness, extroversion-introversion, dominance-submission, sociability, neuroticism, persistence, relative adjustment and maladjustment to home, school, and companions, and other traits. Among instruments for this purpose are the following:

The Adjustment Inventory, by Hugh M. Bell; Stanford University Press; high school and college. Four types of adjustment—home, health, social, and emotional; aims at the location of specific adjustment difficulties.

The Personal Audit, by Clifford R. Adams and William M. Lepley; Science Research Associates.

The Personality Inventory, by Robert G. Bernreuter; Stanford University Press. Measures six aspects of personality: neurotic tendency, self-sufficiency, introversion-extroversion, dominance-submission, sociability, and confidence.

Ratings by former teachers are also employed, as are other records of pupil behavior, which throw light on the honesty, temperament, disposition, and other important character and personality traits of the pupil. Testimony of parents frequently reveals information in this area.

Educational Status and Achievement.—In the large majority of schools scores in various achievement tests are available in various fields. Previous marks and scores in particular subjects throw much light on the degree of background and preparation possessed by the learner.

Many teachers give to some or all of their classes at the beginning of each semester an inventory or placement test which reveals the degree of possession of skills and information prerequisite to success in the work of the semester. Some teachers also give a preliminary test over the field to be covered with the purpose of discovering what is known at the beginning and thus learning what part of the field needs more and what needs less emphasis. If the test is repeated at the end of the semester, the teacher has a measure of the learning that has taken place in whatever the test measures.

Indices of Cultural and Economic Status.—Data pertaining to the out-of-school cultural and economic environment are available from such sources as records of parental occupation, usually made in the general files of information about pupils, and records of home visitation by one or more of the regular teachers or the visiting teacher. These data may include such items as the personal education of the parents, general tone of the home, and neighborhood and church experiences.

As indices of probable future cultural and economic status, the best data commonly available are general intelligence, occupation and education of parents, school marks, vocational choice, work experience, plans for future education, and similar information from the individual's closest associates.

Other Types of Data.—Among records which furnish useful information concerning the pupil are those of his health, civic activities and citizenship, time spent in extracurricular activities, work at home or elsewhere in and out of school hours, leisure pursuits and social associations, and worries. These are gathered from a variety of sources: the school records, the counselors and visiting teacher, conferences with individual learners, and conferences with or reports from parents and employers.

How Much Information Does a Teacher Need?—Obviously no teacher could use all the different data theoretically available or obtainable for all learners in his classes. As the teacher becomes more experienced, he will become more expert in the collection and interpretation of pupil data. In some schools more usable data will be readily available than in others. The teacher should be cautious in the use and interpretation of data, especially those types which require special training to interpret, and should realize always that most data are not conclusive and that hasty conclusions must always be avoided. Only in problem cases will it be necessary to gather and use many of the types of data mentioned. In the few unusual cases which crop up each semester the teacher will be wise to collect all the information possible. The beginning teacher particularly, and for that matter all teachers, would do well to consult other teachers and, in some instances, the administrative counseling officers of the school, about the outstanding problem cases.

4. Adjustment for Bright and Dull Learners

In recent years it has been realized that bright and dull learners differ not only in quantity, but also in quality of ability and that they should be taught differently.

The Bright Learner.—The progress of civilization depends largely upon the contributions of genius. The work of one Edison, of one Pasteur, of one Madame Curie, of one Franklin, of one Bacon, of one Queen Elizabeth, or of one Shakespeare is of more consequence to civilization than the efforts of ten thousand persons of average ability. The loss to society and to civilization because of our failure to develop fully the capacities of the ablest young people is incalculable.

It is particularly important that bright seniors in high school classes be given tasks of college grade. In the great majority of high schools bright students do not grow greatly intellectually and educationally, but probably actually deteriorate, as the investigations of Keys, Terman, Hollingsworth, Featherstone, Baker, Carrol, and others have indicated. As the result of classroom experiences with bright pupils, we are able to characterize them for the purposes of teaching. The bright youngster possesses greater energy and more curiosity; is sociable, active, more capable of dealing with abstractions; perceives relationships more clearly and quickly; prefers to work under his own planning and initiative; likes to explore new and more advanced areas; becomes bored more quickly with simple routine tasks; learns mechanical processes much more quickly than an average pupil; dislikes tasks he does not understand; dislikes rote memorizing though he is superior at it; is good-naturedly critical of dullness and dull people; has confidence in his own abilities; appears lazy if given uninteresting things to do; is likely to seek short cuts; and possesses a wide range of worthy interests.

Teaching Bright Learners.—The bright learner should not only have more work to do, but it should be of a type to challenge his superior and special abilities. He should be required to locate and organize materials, to find and state relationships and generalizations, to read more difficult, technical material. He should be relieved of some of the easier routine tasks which may be necessary for the average or below-average youngster. He should be given larger units, tasks and problems with a greater number of steps. He should be freed of some of the repetitious and wasteful reciting of the class and permitted to work more on his own. For him, instruction may safely be individualized. He should be stimulated to undertake imaginative and creative tasks. For him, frequent diagnostic testing is unnecessary; he can be trained for self-diagnosis and self-planning of remedial work. The brighter the youngster is, the more these suggestions should be employed and the further they should be carried. They usually apply to youngsters with an I.Q. of more than 120 to 125. Those of definitely higher I.Q. (140 and up) should be treated as special individual cases.

The Dull Pupil.—Until recent years the child with an I.Q. of 90 or less rarely continued in school beyond the ninth grade, and those with an I.Q. of less than 80 rarely progressed beyond the sixth grade. Because of our limited experience in teaching dull-normal youngsters in high school, most teachers have not yet learned how to guide those less able boys and girls to learning at all in proportion to their capacity.

The dull child usually possesses to some degree most of the following characteristics which need to be held constantly in mind while teaching him. In comparison with the student of higher I.Q.:

1. He learns in shorter steps or units.
2. He needs more frequent checkups on his progress and more remedial work.
3. His vocabulary is more limited and less precise.
4. He needs to have many new words made very clear in meaning.
5. He does not see relative generalizations or meanings as readily.
6. He has less creative ability and less ability to plan for himself.
7. He is more interested in individuals and in practical topics.
8. He is slightly slower in acquiring mechanical and motor skills, particularly complicated ones.
9. In proportion to his dullness he tires less quickly of mechanical routine tasks and he tires more quickly of difficult reading or abstract discussion.
10. He is quick to generalize crudely, is lacking in self-criticism, and is easily satisfied with superficial answers.
11. He is less envious.
12. He has had unhappy experiences with previous school work and is hence more likely to be irritable in class, lacking in self-confidence, and more interested in non-school life.
13. He is more susceptible to the suggestions of other persons.
14. His difficulties in learning are cumulative.

15. He has a narrow range of interests.
16. He possesses a slow reaction time.
17. He tends to engage in overcompensating activities.
18. He is less able to see the end results of his actions. Remote, long range goals are not impelling to him.
19. He fails to detect identical elements in different types of situations.
20. His attention span is short and must be reinforced by engaging appeal.
21. He especially needs evidence of his progress.

Teaching Dull Learners.—The more practical and successful methods of teaching slow or dull learners grow in large part out of the characteristics listed in the foregoing. Teaching the slow learners, like teaching the bright ones, calls for special planning. The following suggestions are recommended:

1. In presenting new materials, the teacher should associate them and explain them in terms of simple familiar materials.
2. The dull learner must be kept conscious of progress at all times. He must be given reason to believe he is succeeding.
3. Whenever practical, real visual objects and other concrete and lifelike aids should be used.
4. Applications to life should be employed, not only to bridge the gap between school and life but also to promote understanding.
5. Efforts should be made to discover fields of special interest on the part of individual learners and to utilize them if possible by applying learning activities to these interests.
6. Daily assignments involving specific, meaningful tasks are most effective with the dull.
7. The teacher must be satisfied with attempting what is possible and taking time to teach that little well.
8. Utilize manual activities. Have slow pupils *do* things, not because they do things well, but because they learn better that way than otherwise.
9. Avoid an excessive vocabulary load. Use simple and familiar words and simple sentences. Use words in their exact and precise meanings.
10. Explore constantly to discover misunderstanding and relatively poor learning. Do remedial teaching on the spot, but do not be too critical.
11. Encourage dull pupils by letting them explain, but do not confuse others by too many poor explanations.
12. Train the dull pupils in the class to read better. Take some time for oral reading in class for developing comprehension and vocabulary.

13. Make a special effort to see that the pupil understands adequately new terms that are essential to meaning and that will come up later. Write them on the blackboard, define them, and give examples.
14. Avoid giving the dull student, merely to keep him busy, meaningless routine tasks from which little progress in learning can be expected.
15. Avoid sarcasm or frequent criticism. Do not be too free with sincere praise, but be always encouraging with dull pupils who try.
16. Do not be irritated by symptoms of lack of interest, tension, discouragement, or mild disorder in the dull pupil. These are natural symptoms of continued unsatisfying experience resulting from being forced to attempt more than ability justifies. They diminish as the dull students are given learning activities that are appropriate to their capacities, abilities, and interests.
17. It is very important that the dull pupil like and have confidence in his teacher.
18. Care must be taken to provide reading material of easy vocabulary and with sentence structure and content suited to the pupil's age level, interests, and experience.
19. It must be remembered that dull pupils usually have less cultural opportunity at home, less well-educated parents, less reading material at home, and in general poorer background for learning.

The teacher must remember always that school is particularly dull and unexciting to the dull student compared to the out-of-school activities that make up his life. To recapitulate, the teacher should observe the following general principles:

1. Be content to attempt less and make sure of better learning of what is attempted.
2. Employ practical, concrete, lifelike materials and learning activities.
3. Be sure that the student understands as he goes along.
4. Be patient and encouraging in word and in manner.
5. More repetition is required for the slow learner.

The Research Division of the National Education Association reported in 1943 the relative frequency with which practices of adapting to slow-learning pupils were used as shown by the data of Table 3. The most common provisions were more individual instruction, more drill and practice, less work and less difficult assignments, use of less complex abstract material and more concrete material, and encouragement of more manipulative and instructional activity.

TABLE 3

General Provisions Made for Slow-Learning Pupils in Three Types of Cooperating High Schools

Provisions Made	Per Cent of		
	302 Junior High Schools	524 Comprehensive Senior High Schools	192 Combined Junior-senior High Schools
A. A large majority of schools (75 per cent or more) report:			
1. That the provisions which they ordinarily make for slow-learning pupils differ in some respect from those made for pupils of average ability. .	95[a]	90[b]	96[c]
B. A smaller majority (between 50 and 75 per cent) report that they ordinarily make the following provisions:			
2. Individual coaching or remedial work in special periods	72	62	64
3. Variation from the standards of achievement required of average pupils in the same classes. . .			
4. Individualized instruction and guidance within classes containing average pupils—no definite grouping (a large minority in junior high schools)	63	57	67
5. Repetition of a subject if achievement in that subject is unsatisfactory (a large minority in junior high schools)	41	55	56
6. Separate classes apart from average pupils (a large minority in combined junior-senior high schools)	39	53	55
C. A large minority (between 25 and 50 per cent) report that they ordinarily make the following provisions:	68	50	48
7. Separate learning groups within classes containing average pupils	32	31	40
8. Variation from the number of courses carried at a time by the average pupil	25	37	41
9. Special curriculum involving a variety of school subjects and extending through several school years—not for average pupils	32	27	31
10. Variations from the amount of freedom allowed the average pupil in choosing courses	25	26	30
11. Variation from the length of time required by the average pupil to complete the school curriculum (a smaller minority in junior high schools)	19	32	36
12. Variation from the average amount or kind of participation in extracurricular activities (a smaller minority in junior high schools)	15	26	34

[a] This percentage is based on replies from 308 schools.
[b] This percentage is based on replies from 545 schools.
[c] This percentage is based on replies from 202 schools.

From *National Education Association Research Bulletin*, XXI, 67

5. Adapting the Course of Study

Obviously it is not practical to use the same subject matter or the same materials for all pupils regardless of interest, capacity, ability, future needs, or background. A variety of plans are employed for adaptation of subject matter and learning activities, and a number of these will now be considered.

Ability Grouping.—In schools in which the upper 20 or 25 per cent of a given class, let us say English II, includes enough pupils to form a special section of bright and one of slow pupils, ability grouping can be used with definite success. While general agreement is lacking and it is impossible to make precise conclusions from experiments in which learners are using different subject-matter materials, the consensus of scores of investigations is that results are improved when ability grouping is employed intelligently (as far as results that can be measured on tests are concerned), even though instruction was not adapted to the group as well as it could be in more than a few of these experiments. Unless great care and intelligence are used to adapt instruction to the differentiated group, it may not be a very wise procedure. Whenever adaptation is used, care must be taken to keep at a minimum the stigma attached to being in the slow group. When pains are taken to avoid stigmatizing the slow group, the ill effects of grouping are probably materially less than in heterogeneous classes in which the slow learner cannot hope to excel and is daily faced with competition with which he can hardly fail to contrast himself even if his teachers do not do so openly.

TABLE 4

PERCENTAGES OF COOPERATING HIGH SCHOOLS HAVING ONE OR MORE SEPARATE CLASSES FOR SLOW-LEARNING PUPILS IN INDIVIDUAL SUBJECT FIELDS *

Subject Fields	Per Cent of			Per Cent of Senior High Schools with Enrollments of			
	256 Junior High Schools	508 Senior High Schools	187 Junior-Senior High Schools	Below 200 (56 Schools)	200-499 (115 Schools)	500-999 (124 Schools)	1,000 and over (208 Schools)
English	70	56	56	13	32	59	78
Mathematics	63	39	46	7	23	41	55
Social studies	56	31	38	5	13	27	49
Science	41	28	33	5	13	31	40
Industrial arts	26	10	18	4	4	13	12
Commercial subjects	11	17	13	4	4	13	27
Foreign language	9	12	8	0	0	13	22
Household arts	24	9	14	2	4	11	11
Music	14	3	10	0	1	4	4
Art	14	3	7	0	1	2	4
Physical education	11	3	6	0	0	3	6

* From *National Education Association Research Bulletin*, xxi, 71.

Even when ability grouping is employed, there is still very great opportunity for adaptation and differentiation of materials and methods with regard to individual students within the slow, the average, and the bright class.

A study by the Research Division of the National Education Association revealed that forming separate classes for slow-learning pupils has already become a fairly widespread practice, especially in English, mathematics, and the social studies (Table 4). This practice is most widespread in junior high schools.

Pupils who should be placed in slow-learning classes may be best identified by means of a combination of three or all of the following criteria: (1) general intelligence test, (2) average mark in all subjects in previous year or two, (3) average mark made in previous year in subject involved, and (4) objective test covering the field concerned as taught in the previous year or two.

Supervised Study.—One of the truly important advantages of the longer period and supervised study is the opportunity offered to give attention to the individual. Among the possibilities afforded are the following:

1. The instructor has unusual opportunity to gather information which will furnish a basis for diagnosis and individual treatment, such as special difficulties, home and outside influences, the student's chief interests, special antagonisms or other complexes not favorable to the subject matter or to the teacher, and special handicapping factors, such as health, worries, and demands on time out of class.
2. It is possible to adapt the assignment much better to the needs of the slower and the abler students alike, as there is less necessity to care for the individual difficulties of the slow students in the preparation of the class as a whole for the assignment, and the opportunity is provided for supplementing the assignment for the abler students.
3. Because of the lengthened period, division of the section into two or even three subsections is possible. In the event that the class period is divided between the sections for separate recitations, the increased amount of time available is very acceptable.
4. The opportunity for personal help and conversation, free from the formality of the class recitation, and the possibility of privacy in relationships with pupils may both be used to excellent advantage by a clever teacher to adapt criticism and approval, encouragement and rebuke, to the individual nature of the pupil without assuming before the class the role of one who varies standards. All the special advantages that attend private talks in these connections are available to the teacher.

5. The teacher can more easily pierce the defense of sophistication and indifference assumed by many pupils in the presence of a class of their fellows, which weakens during personal and informal contacts.
6. An opportunity is afforded to give individual help to pupils on difficulties peculiar to them, not only in the case of the slow but of the medium and brighter pupils, and also to pupils whose difficulties are due to absence or the fact that they are transfers; likewise there is opportunity to give needed training in how to study.
7. The opportunity is offered to check up on the pupil's progress, locate weak spots, analyze difficulties, and make individual suggestions for remedial work.
8. There is the opportunity to arouse interest by encouragement, by raising questions and arousing curiosity, by the sheer personality and personal influence of the teacher.[2]

The Differentiated Assignment.—For use particularly in ungrouped classes, a great many teachers have learned to employ effectively differentiated assignments, usually with three levels: for the dull, the average, and the bright youngsters. In the most effective practice these three levels are worked out on the basis of what is known of the bright and the slow pupils and how they learn. Although commonly employing for all three levels some common materials and learning activities, in the best practice adapted courses of study also include materials and activities suited to the particular level.

The following examples of differentiated assignments are given not as ideal examples but as typical ones.

In the example of an A-B-C assignment which follows, the assignment problem is one of several which compose the unit on disease. Activities one, two, and three form the basic C level. The difference between the B and C requirements is one activity. The difference between the A and B levels is also one activity. In each case the activity required for the upper level not only involves more time but is of a more difficult nature, demanding superior thought.

No single example can indicate the many desirable possibilities encompassed by this assignment plan. The impetus for learning generated by a three-level assignment may certainly be profitably used, especially under the direction of a teacher who keeps foremost in mind the real purposes of education.

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[2] From *Modern Methods in High School Teaching,* by Harl R. Douglass, Boston: Houghton Mifflin Co., pp. 474-475.

THREE-LEVEL ASSIGNMENT IN SCIENCE

Unit Problem: How can we protect ourselves from disease germs?
Assignment Problem: How can we prevent the spread of disease germs?
"A" Activities: Complete correctly activities one, two, three, four, and five.
"B" Activities: Complete correctly activities one, two, three, and four.
"C" Activities: Complete correctly activities one, two, and three.

Activity One

For help in solving this problem read in *Health For You* by Katherine B. Crisp, pp. 382-400.

Activity Two

Directions: Complete the following outline. After each question or problem write the answer. Fill in the blanks of the completion statements with the word or words to make the sentence correct.

I. How germs enter the body.
   A. Name three entrances through which germs get into the body.
   B. What habits or practices help germs in their travels from one person to another?

II. How germs may be destroyed outside the body.
   A. How may objects be sterilized?
   B. In what ways are chemicals used to check the growth of germs, or to kill germs?

III. How germs may be prevented from leaving the sick-room.
   A. What precautions should be taken when a member of the family is ill with a communicable disease?
   B. When should a person be quarantined?

IV. How the body fights disease.
   A. How may the body defenses be weakened?
   B. How do the white corpuscles help protect us from infection?
   C. What barriers does the body have against disease germs?
   D. In what ways do antibodies guard the body from diseases?
   E. The ability to resist disease is called ————.
   F. Everyone is born with a certain degree of ———— against some disease germs.
   G. Active immunity is developed by the body through the effects of ———— or ———— entering the system.
   H. Passive acquired immunity is obtained by the injection of an immunizing ———— or ————.

V. How smallpox can be prevented.
   A. How does the death-rate from smallpox now compare with the death-rate in the 1700's?
   B. Describe the nature of this disease.

C. How did Edward Jenner first prove the value of the cowpox vaccination?
D. How is smallpox vaccine prepared?
E. Why is a smallpox vaccination mark a badge of good citizenship?
F. Following the vaccination, immunity against smallpox lasts for about ———— years.

VI. How we can protect ourselves from diphtheria.
A. How are diphtheria bacteria spread?
B. Why does the doctor make a diphtheria culture?
C. The incubation period for diphtheria is ———— days.
D. Describe how diphtheria antitoxin is obtained and used.
E. What does a positive reaction to the Schick test mean?
F. How does toxoid differ from the toxin-antitoxin?
G. A person should be immunized against diphtheria when he is about the age of ————.
H. When was diphtheria considered the most dreaded disease of childhood?
I. How can all parents of today protect their children from this disease?

VII. How scientific prevention of disease has reduced the danger of typhoid fever.
A. Why is typhoid fever more common today in rural areas than in the larger cities?
B. Describe the nature of this disease.
C. List four ways in which typhoid fever may be spread.
D. Following a typhoid fever vaccination, immunity lasts for about ————.
E. One of the greatest obstacles to successful control of typhoid fever is the ———— ————.
F. What precautions against typhoid fever should one take on a vacation trip?

Activity Three

Read the story of Edward Jenner by Grace T. Hallock and C. E. Turner in *Health Heroes* series (Metropolitan Life Insurance Company). Write a report describing his most interesting experiences. How did his greatest discovery affect the lives of the people?

Activity Four

Read *Typhoid Fever, Cause-Transmission-Prevention,* Educational Health Circular Number 7, the Illinois Department of Public Health. Make a written report. Find out when the last typhoid fever epidemic covered Rockford.

Why is this not likely to happen today? Make a list of all the possible ways typhoid fever germs may be spread. Study tables III and IV on page 18 of the pamphlet. What conclusions may be drawn from the data presented here?

Activity Five

Plan and participate in a mock-radio broadcast on the subject "The Spread of Disease." Read *Helpful Hints About Public Health*, Educational Health Circular Number 1, Illinois Department of Public Health. Make twenty questions and answers which can be used in a question-answer discussion for the broadcast before the class.[8]

The Flexible Assignment.—In some schools the learning materials and activities are not segregated for three groups or levels, but a variety of units of materials and activities are provided. A minimum is required for the slow. Each student is encouraged to do as much as he can in view of his abilities and the time available. An example of the flexible assignment follows:

ILLUSTRATIVE FLEXIBLE ASSIGNMENT IN LITERATURE

The first five contracts are to be worked out by all pupils. No higher grade than *M* can be obtained from this amount of work. If you wish to try for a *G*, or better, at least two extra credit assignments must be completed. When the book has been finished, a departmental test will be given. This test will count one-half.

I. *P*, 65-74; *M*, 75-84; *G*, 85-94; *E*, 95-100.

Read pages 168-189 in your text. Fill in the blanks in the following selection:

Let us imagine ourselves living in Queen ————'s time. We are about to spend a rollicking afternoon at the theater. We have noticed ———— flying from the ———— Theater across the ————. As it is almost ———— o'clock, we hasten on. After passing through the entrance, we find ourselves standing in the ————, surrounded by a group of people called ————. Having purchased stools, we go up and sit in the ————, where we watch those "who carry a year's revenue on their backs and desire to publish a handsome man in a new suit" seated on the ————. About us people are smoking, playing cards, or reading pamphlets which have been circulated. They are not, however, waiting for the curtain to rise, for there is none except that one which is between the ———— and ———— stage. We are to see *The Merchant of Venice*, and only by means of a ———— do we know that the opening scene is a street in Venice, for there are no facilities for changing scenery. It is customary in the ———————— century to have the entire cast composed of ————————, elaborately garbed in the discarded clothing of the gay ————————. The play moves on, somber Antonio, debonair Gratiano, impulsive Bassanio, and scheming Shylock each in his turn. We are chuckling at the prating waggery of Launcelot Gobbo when a burst of rain sends the standing rabble scurrying to shelter, and our play is postponed till the following day.

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[8] John J. Cochrane, "A Three-Level Assignment for General Science," *School Science and Mathematics*, XLV, 523-527.

Read pages 127-139. Fill in the blanks in the following selection:

William Shakespeare was born in the village of ———————————— in April, ————————, forty-three years before the first permanent English settlement in America. Although financial circumstances forced him to leave school at an early age, he had gained some knowledge of ———————— and ————————. Perhaps he even wrote some boyish verses in those languages. At the age of ———————— he had married ———————— of the village of ————————————. Unable to support her or, as some accounts aver, harassed by ———————— over the theft of a ————————, he left his native village and went to ————————————. There he became an ————————. His duties, however, were evidently varied. He revised and even rewrote ————————. He created no original themes, but depended largely upon ———————— and ———————— as sources of material. Shakespeare may be termed a universalist. What he wrote finds an understanding heart the world over, in every age. His dramas most often studied in high school are ————————————, ————————————, ————————————, and ————————————. He died in the year ———————— and was buried at ————————————. He wrote for his tombstone these lines:

"————————————————————————
————————————————————————
————————————————————————
————————————————————————"

They have prevented the removal of his remains to ———————————— ————, where rest the ashes of many of the other great English poets.

II. Know the following:

A. A drama is a story told through direct discourse and actions.
B. A tragedy is that form of drama in which the outcome is unfavorable to the leading character or in which evil triumphs.
C. A comedy is that form of drama in which the outcome is favorable to the leading character or in which good triumphs.

Write the following:

A. After reading *The Merchant of Venice,* classify it as a tragedy or comedy and support your classification.

  - B. In one statement tell how a drama differs from a novel.
  - C. List three dramas and three novels.

III. A. Memorize Portia's plea for mercy, Act IV, Sc. 1, page 69, lines 179-193.
  - B. Memorize the following familiar quotations: Page 125—No. 3, 5, 6, 8, 9, 11, 13, 16, 18, 21, 22, 24, 25, 26, 30, 31, 32, 33, 34, and 35.

IV. Describe an incident that happened to you today, using Shakespearian language.

V. Every play, like every novel, has its plot. This plot is composed of the series of events in the order in which they occur. Name the main plot and the three subplots and show by a diagram how these stories are united to make one.

For Extra Credit

I. Choose one or more of the following assignments:
  - A. Draw a plan for the ground floor of an Elizabethan theater.
  - B. Make crepe costumes for two of the leading characters.
  - C. Construct an early seventeenth century theater.
  - D. Create a stage set for any one of the scenes.
  - E. Use puppets in any scene or portion of it.

II. Write a line-by-line explanation of the "mercy" speech and then summarize it in one sentence.

III. Name a character to answer each of the following descriptions and prove the truth of your choice by giving one or two quotations of not more than one line each: The most revengeful, the wittiest, the most romantic, the most generous, the most reckless, and the most unfilial.

IV. Choose one or more of the following assignments:
  - A. Modernize any scene in the play.
  - B. Write for classroom dramatization a playlet the topic of which has been suggested by your study of this play; as, friendship or the futility of revenge.
  - C. Discuss the question of justice to Shylock.
  - D. Give your opinion of the attitude of parent to child or of child to parent displayed in the conduct of Jessica, of Portia.
  - E. Shylock has presumably many years to live. Give a glimpse of his probable later history.

The Project Method and Other Large-Unit Plans.—The project method, the contract plan, and other large-unit procedures in instruction afford excellent opportunities for adjustment of learning materials and activities to the individual's abilities, interests, and needs.

In the first place the student may select a project and plan it according to his interests and abilities. Seldom will he attempt what for him is impossible or uninteresting. Should he do either or both, he has opportunity to revise his plans. The fact that he is self-directing tends to make him happier at his work and consequently more effective.

The large-unit assignment gives opportunity for the more capable student to plan, direct his own activities, do creative work, work with less help from the teacher, and proceed at his own rate. The lessened necessity for group recitation allows time for the teacher to give individual help, instruction, and encouragement to the learner and to give additional individual assignments to the more capable.

Individual Instruction.—Long before the graded-class type of organization became prevalent, individual instruction was in vogue. In the last half-century under the impetus of Preston Search at Pueblo, Carleton Washburn at Winnetka, Frederick Burk at San Francisco, Harry Miller at the University of Wisconsin, Helen Parkhurst of Dalton Plan fame, and others, various types of individualized instruction have been employed. In its extreme form, each individual is given his assignments, his instructions, and his evaluation as an individual. As commonly utilized there is at least some group work; either the class as a whole or a small group in it are given group instruction and assignments occasionally, and group tests are employed.

In some schools, as is true of the Winnetka Plan, each pupil moves at his own rate, completing a year's work in a subject in six months, eight months, or a year and a half as the case may be. A statement made by one of the authors of this volume in an older publication of the arguments for and against individual instruction furnishes practical suggestions for carrying it into effect and avoiding its dangers.

> The more important advantages claimed for individual instruction are:
>
> 1. It allows the slow child to progress at his own rate, thus permitting thoroughness and avoiding discouragement.
> 2. It prevents the illusion of making progress when it is not really made, which misleads so many slow or indolent children under class instruction.
> 3. It tends to concentrate the attention of the pupil on his own individual achievement, upon which his progress through the course of study depends, instead of upon the average progress of the class.

4. It tends to focus attention upon the mastery of subject matter and upon educational growth, and away from perfunctorily satisfying demands imposed by the teacher.
5. It permits the more able pupil to make progress at his optimum rate and thereby realize the possibilities of his peculiar gifts.
6. It tends to eliminate that undesirable training for the gifted child which results from his being held down to the pace of the average and which sometimes generates habits of idleness and attitudes of satisfaction with achievement that are less than capacity.
7. It brings about personal contacts between pupil and teacher, for which the "pupil-tutor" situations are much more favorable than "teacher-class" situations.
8. It permits valuable exercise of individual initiative, especially on the part of the more capable pupil who now is supervised as closely as the slow or mediocre one.
9. It tends to reduce retardation and to prevent the elimination of the slower pupils.

On the other hand, the following arguments may be advanced in favor of class or group teaching:

1. It provides better for very important educational outcomes, such as skill and habits of cooperation, skill in oral discussion, development of ideals from social situations, and other social attitudes, ideals, skills, and habits necessary as training for future participation in family, community, business, and national life and in civic, commercial or recreational activities. These may be developed much better in class teaching than where individual instruction is employed.
2. The mutual stimulus to activity which comes from group contacts —competition, friendly rivalry, desire for good opinion of one's fellows and for excelling them, and encouragement resulting from their achievements—is not possible under the individual plan.
3. The group plan stimulates effort through discovery of problems and the development of interest in the class discussions.
4. The group plan is valuable because of the opportunity for the slow to learn from the recitations and discussion of the others.
5. The group plan makes unnecessary duplicate explanations, as under the group class plan one explanation or set of instructions serves for all.
6. The individual plan involves too much teacher-time in planning work for the different individuals and in keeping track of the progress of individuals.
7. The individual plan requires a type of teacher having a more thorough mastery of subject matter, and who is a keener student of human nature than is the average high school teacher.[4]

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[4] From *Modern Methods in High School Teaching*, by Harl R. Douglass, Boston: Houghton Mifflin Co., pp. 492-493.

The use of individualized instruction either in part or wholly—occasionally or regularly—calls for the following on the part of the teacher:

1. A fairly complete and growing knowledge concerning the potentialities, abilities, and interests of each individual pupil, to be used not only in planning assignments but in seeing that he works up to capacity.
2. Systematic and intelligent planning of a variety of learning materials and activities for different levels of ability and background.
3. Special care that records are kept of the progress of each individual, since individuals will diverge greatly from the normal semester's or year's course of study.

Two Opposed Types of Provision for Individual Learning.—There is always the question of whether in individual instruction or in ability grouping bright pupils should advance more rapidly and slow pupils less rapidly than one grade per year—that is, each group pursuing substantially the same course of study but at different rates—or whether all groups should advance at substantially the same rate, the slow doing only the minimum essentials while the bright individuals do much more difficult things. While the preponderance of practice and opinion today is toward the latter course (emphasizing perhaps unduly and universally what is thought to be a wise policy of keeping young people together in groups of rather uniform chronological age), there is much to be said for employing a combination of the two methods, since the brighter student with each year becomes more and more superior to the normal course of study and steadily more capable.

Grouping by Sex and Interests.—It is surprising that for purposes of instruction classes are not formed more often of boys or of girls alone. It is well known from common observation and from careful studies that boys and girls have different interests. It is certain that their future needs will be different. It has been observed by many teachers that when segregated both boys and girls are more serious in interest, frank in discussion, more cooperative with teachers, and less inclined to create disciplinary problems.

While no appreciable sex differences in abilities can be demonstrated beyond slight superiority of boys in mathematics and of girls in appreciation of literature, it is clear that instructional materials and methods could be profitably differentiated and hence better suited to the individual if classes in most subjects were composed of but one sex. This is particularly true in the cases of classes in science, literature, and the social studies. Just to what extent, if any, these values exceed those of social education in mixed classes is not clear. Of course, the social values may be achieved in other aspects of social life.

6. Diagnostic and Remedial Procedure

Brueckner and Melby, Buswell, and others have demonstrated repeatedly the effectiveness of diagnostic study of the individual's learning program and the use of individualized remedial materials and methods. In view of the common practice of promoting pupils a grade a year regardless of achievement or status the necessity for diagnostic remedial procedures has become much greater.

Types of Diagnostic Procedures.—As Brueckner has pointed out,[5] the methods available to the teacher for the purpose of diagnosis tend to fall into six categories:

1. Observation of the pupil at work on his daily assignments, noting his study habits and procedures, attitudes toward school and school work, interests, and motivations.
2. Supplementary analysis of various characteristics of the pupil's written work.
3. Supplementary analysis of the pupil's oral response and reactions.
4. The use of objective, analytical diagnostic devices proposed especially to bring into relief weakness in critical problems, including such devices as diagnostic charts of errors in handwriting, arithmetic and spelling and language standard progress tests, study habit inventories,[6] and diagnostic inventories prepared by the teacher for specific units of study.
5. Interviews with the pupil, parents, and fellow pupils.
6. Laboratory procedures, including the use of such instruments as the kymograph, tachistoscope, motion picture camera, dictaphone, and records.

It is obvious that diagnosis should be made in the light of all available pupil data, e.g., I.Q., M.A., out-of-school activities, home conditions, health, and interests. In the Thirty-fourth Yearbook of the National Society for the Study of Education, which was devoted to the subject of educational diagnosis, several chapters were given over to diagnosis in the subject fields of reading, English, arithmetic, social studies, science, health education, speech, art, and music.

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[5] L. J. Brueckner, *Techniques of Diagnosis, Thirty-fourth Yearbook* of the National Society for the Study of Education, Chs. VII-VIII.

[6] G. L. Wrenn, *Study Habits Inventory,* Stanford University Press.

The Diagnostic Inventory.—As a sample of a good basic diagnostic inventory for a whole high school subject, McCallister's inventory of reading difficulties is reproduced here:

1. *Reading difficulties growing out of pupils' methods of attack:*

Comprehension of only part of passage shown by omission of points of major importance.
Failure to use given references in locating materials.
Failure to use statement of minimal essentials as a guide to reading.
Copying material from textbook without interpreting it.
Failure to recognize problem caused by careless reading.
Failure to select materials pertinent to problem, caused by partial reading of assigned passage.
Use of previous knowledge instead of assigned passage in reacting to problem.

2. *Reading difficulties caused by inability to recognize relations:*

Failure to recognize relation of reference materials to problem.
Failure to discriminate between relevant and irrelevant material.
Inability to recognize relations among items in statement of minimal essentials.
Inability to interpret mimeographed statement of minimal essentials in light of major problem of unit.
Failure to recognize relative values shown by substitution of a general statement for specific points of importance.
Lack of critical reading shown by failure to discriminate between historical facts and mere probabilities.

3. *Reading difficulties arising from lack of knowledge of subject-matter.*

4. *Reading difficulties caused by deficiencies in vocabulary:*

Misunderstanding of instructional materials caused by misinterpretation of vocabulary.
Inabilities to interpret instructional materials caused by lack of understanding of vocabulary.

5. *Reading difficulties caused by inaccuracies:*

Misunderstanding of essential point in unit caused by inaccuracy in interpreting reference materials.
Misreading technical words shown by errors in spelling.

6. *Reading difficulties arising from lack of clearness in directions given to pupils:*

Misinterpretation of problem caused by arrangement of directions.[7]

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[7] James M. McCallister, "Reading Difficulties in Studying Content Subjects," *Elementary School Journal*, XXXI, 191-202.

Many textbooks, especially in junior high school mathematics, provide diagnostic tests with the latest remedial material. As an example the following is reproduced from a current ninth grade mathematics textbook: [8]

I. Change to per cent to the nearest tenth of 1%.

1. .27 2. .08 3. .007 4. 1.35 5. 3/8 6. 15/16 7. 23/30 8. 11/40
9. 6/2500 10. 3/500 11. 16/3 12. 9/5

II. Copy and complete:

1. 30% of 24 is ____
2. 27 is ____% of 30
3. 18 is 75% of ____
4. 13.5% of 80 is ____
5. ____ is 75% of 60
6. 40 is ____% of 64
7. ½% of 2200 is ____
8. 6 is ____% of 2400
9. ____% of 80 is 96
10. 125% of 40 is ____

III. Copy and complete:

1. 12% more than 200 is ____
2. 40 decreased by 20% is ____
3. 20 increased by ____% is 24
4. 36 is 20% more than ____
5. 18 is ____ decreased by 10%
6. 56 is 35 increased by ____%
7. 50 increased by 10% is ____
8. ____% less than 80 is 60
9. 57 is 25% less than ____
10. 72 increased by 12.5% is ____

Number Correct in	Excellent	Good	Fair	Poor
Part I..............	12	11-10	9-5	4-0
Part II.............	10-9	8-7	6-4	3-0
Part III............	10-8	7-6	5-4	3-0

There are available standard diagnostic tests which may be purchased at reasonable rates from publishing concerns. Among them may be mentioned:

Douglass Standardized Diagnostic First-Year Algebra Test, Test 2, Revised
Wilson Language Error Test, Test 1
Wilson High School English Test
Glenn-Gruenberg Instructional Tests in General Science
Kilzer-Kirby Inventory Test for the Mathematics of High School Physics
Rollinson Diagnostic Shorthand Tests

For some subjects, e.g., home economics, industrial arts, and agriculture, rating scales have been developed which are useful in revealing specific weaknesses.

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[8] Harl R. Douglass and Lucien B. Kinney, *Everyday Mathematics.* New York: Henry Holt & Co., Inc., pp. 352-353.

QUESTIONS, PROBLEMS, AND EXERCISES

1. List in order of importance the principal ways in which high school pupils differ one from another. Be prepared with reasons for your order of listing.
2. For the subject you will probably teach most, list in the order of their importance the ten provisions for individual differences in Table 2.
3. In your principal subject, how do you think you would adapt instruction to differences in interests?
4. In your principal subject, how do you think you would adapt instruction to differences in future needs of pupils?
5. In your principal subject, how do you think you would adapt instruction to differences in background and previous preparation?
6. Make a list in order of importance of twelve to fifteen items of information about individual pupils you would like to have for each class you teach. Tell where you would get the information and how you would use each kind.
7. Be able to describe and explain in class the use of at least one type of "personality" test or inventory.
8. With respect to teaching your principal subject, tell what are the characteristics of bright pupils and how you would adapt instruction to them.
9. With respect to teaching your principal subject, tell what are the characteristics of dull pupils and how you would adapt instruction to them.
10. Make a differentiated assignment for a lesson or a unit in your principal teaching subject.
11. Discuss the advantages, dangers, limitations, and probable techniques of employing individual instruction in your principal subject.
12. Construct a diagnostic test for a lesson or unit in your principal subject and tell how you would use it as a basis for remedial learning.

Chapter 20

MEASURING, EVALUATING, AND REPORTING PUPIL PROGRESS

1. Purposes of Measurement

One of the most important types of responsibilities of the teacher is the measurement and evaluation of the growth of learners in his classes. Among the purposes of measurement and evaluation the following are the most important:

1. Incentive to pupil effort
2. Diagnosis (including self-diagnosis) of pupil success and failure
3. Guidance and counseling
4. School records, research studies, and reports to parents and to colleges

Incentives to Pupil Effort.—While there are teachers who seem to be able to obtain wholehearted learning efforts on the part of students in their classes without the use of artificial incentives, they are as yet not common. To accomplish this is especially difficult by reason of the fact that students are trained in school to work for marks; therefore it does not seem to them worth while to work except for marks. Consciously or unconsciously, students come to think of the primary purpose of studying as being to meet the demands of the teacher and the school. While, to be sure, there are a few schools where formal marks are not employed as incentives, they are not numerous nor is their number rapidly increasing. More rapidly increasing is the number of teachers who place less reliance upon marks than upon pupil motivation by felt need of a natural type, upon interest, and upon judicious use of informal approval. Nevertheless, until the teacher has reached that level of teaching quality, he will be compelled to resort to marks as a type of effective incentive.

Among the best modern trends in practice in measurement and evaluation is the increased use of more natural and objective measurements. Instead of having the student depend upon teacher opinion or upon teacher-made tests, it is better, for several obvious reasons, to attempt to assist the learners to see for themselves the degree of quality of their learning achievement—particularly by use of their ability to apply their learning to life situations. Teachers are increasingly using group or cooperative evaluation and by so doing are ameliorating the reaction that pupils are inclined to feel toward arbitrariness on the part of the teacher.

Measurement for Diagnosis.—More and more teachers are employing measurement for the purpose not only of discovering the degree of mastery of the more specific outcomes of learning and teaching, but also of locating specific weaknesses and difficulties and thus making it possible to focus remedial teaching and learning upon those weak spots which are either important in themselves or are fundamental or prerequisite to other learnings.

For the purposes of diagnosis, many teachers have learned to construct tests which bring into relief the status of mastery of separate specific items or phases of learning. Many textbooks contain diagnostic test material for the use of teachers. Not only are paper-and-pencil tests used widely today for diagnostic purposes, but various other means are employed, including score cards and rating scales, directed observations, and anecdotal records by teacher, learner, and fellow learners. An effective diagnostic test possesses the following properties:

1. It comprehends all of the important outcomes within the area being explored.
2. Each item is so constructed that the response of the learner is associated with one outcome, not several, thus enabling the teacher to know what the specific deficiency is.
3. The items are sufficiently reliable so that correct performance may be attributed to reaching the specific goal and incorrect performance to failure to achieve it, and that either correct or incorrect performance can hardly be the result of guessing or other chance factors.
4. It possesses the qualities which characterize all other types of satisfactory tests.

Measurement for the Purposes of Guidance.—As will be indicated in Chapter 22, "The Teacher and Guidance," the most valid basis for prediction of academic success in school and college is previous success as measured by tests and marks. Because of their importance for this purpose, marks should be a reliable and valid measure of growth toward all of the more important objectives of the particular course and in proportion to their relative importance. Consequently, course marks should not measure, except incidentally and indirectly, such things as attendance, punctuality, conformity to school and classroom regulations, promptness in handing in reports, neatness, or any other type of growth or behavior not in itself an objective of the particular course.

In addition to marks, other types of measurements are important for guidance, including general intelligence tests, prognostic subject tests, such as those for algebra and French; character and personality tests and ratings; interest and adjustment inventories; and mechanical, clerical, and other special aptitude tests. Pupil data and their interpretation and use have been discussed to some extent in Chapter 19 and will be further discussed in Chapter 22.

Measurement for School Records, Reports, and Research.—Even if it were not desirable to use tests as incentives for diagnostic purposes, for counseling, or for any other educative functions, it would still be necessary for other purposes to devise and employ fairly accurate measurements of school achievement. In many schools, classifications and promotions are based on marks. Parents insist upon reports of the progress and status of their children, although in recent years recognition of certain undesirable reactions of parents to report cards has caused school people to doubt the wisdom of sending home the usual type of report.

High school records follow the youngster into the college and vocational worlds. Institutions of higher education and industrial and business firms are more and more employing personnel and guidance officers to select, place, and counsel college students and young workers on the basis of school records of ability, achievement, character, interests, and personality.

The usefulness of measurements in carrying on scientific investigations of human behavior is not to be ignored. Of particular significance have been investigations of the factors related to individual success in school for the purpose, among others, of predicting the probable degree of success in various fields of study and of the relative effectiveness of various materials, methods, and conditions of instruction.[1] That the success of such investigations has been limited is attributable in large part to the fact that measurements of learner growth or school success have been of very limited validity —furnishing measures of growth toward only part of the objectives of the instruction or failing to weigh the measures of different outcomes according to their relative importance.

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[1] See section 7, "The Teacher and Research," in Chapter 24.

The Necessity for Accurate Marking.—Because of the significance attached to school marks, they should be accurate indices of pupil achievement. Decisions in regard to a pupil's success or failure in a course and his promotion to a higher grade are made largely upon the basis of marks. Errors in marking which result in an injustice to the pupil in regard to these matters are extremely serious. Feelings of bitterness, discouragement, and inferiority on the part of the pupil, as well as the humiliation of the parents, are but a few of the concomitants of failing marks. Needless retardation is a wasteful matter both for the individual and for society. Since retardation is one of the causes of pupil elimination from school, errors in marking may serve as a contributing factor to many pupils' terminating their formal education prematurely. The reliance placed upon school marks in guidance programs makes it doubly essential that classroom teachers make accurate appraisals of each pupil's achievement.

There is clear evidence that the distribution marks given by teachers in the same school vary greatly. It is not uncommon to find one teacher awarding a preponderance of A's and B's to the pupils in his classes while another teacher, teaching the same pupils, rarely gives a high mark to a student. This variability cannot be explained by the differences in difficulty of high school subjects. Neither can it be attributed to the differences in the quality of the teaching. It is likewise doubtful that the diversity in the marks given in various courses can be explained by differences in the abilities of pupils. Essentially the same type of general mental ability is required for success in each of the high school subjects. Perhaps the determining factors in the variability of marks are the differences in the methods of appraisal, temperaments, and standards of teachers. Further proof of the unreliability of teacher's marks is provided by investigations which reveal that evaluations placed upon the same test paper by a teacher at different times vary greatly.

Greater accuracy and uniformity in school marks are desirable for a number of reasons. Pupils are confused when subjected to widely varying standards of achievement. Parents and prospective employers are misled by marks which give erroneous impressions of pupils' actual school accomplishment. Guidance which is not based on sound information is little more than professional quackery. Reliable measures of pupil achievement are also needed for purposes of determining the efficacy of learning materials, teaching methods, and supervisory procedures.

While more accurate instruments of measurement and intelligent interpretation of the results would no doubt increase the reliability of marks, a major source of the difficulty in marking is the failure of teachers to agree upon what a mark should represent. Some teachers believe that a mark should represent achievement alone. Other teachers are of the opinion that a pupil's mark should be a composite of his achievement, attitude, behavior, and effort. It would certainly simplify the problem of marking to have the mark stand for achievement alone. If ratings on other important matters such as conduct and effort are deemed advisable, separate entries can be made on the pupil's report card and other school records.

2. TYPES OF MEASUREMENT

Daily Class Marks.—In high schools in which the work is organized on the daily class period plan, some teachers record marks based upon pupils' achievement in each recitation. These teachers consider a series of daily marks as one of the bases upon which a final evaluation of each pupil's work should be made. Some of the purported values of the daily class mark are:

1. The daily mark is an immediate incentive for pupil study.
2. A large number of daily marks provides a broad base upon which a final mark in the course can be determined.
3. Use of the daily mark decreases the emphasis upon final examinations.
4. Its use makes pupil evaluation a continuous process throughout the course.
5. It serves as the basis of pupil diagnosis and remedial work.
6. Its use assists in establishing pupil habits of attention during the recitation.

Many teachers are convinced that the disadvantages of the daily marking procedure far outweigh the advantages. The teacher tends to become a bookkeeper intent upon recording a symbol opposite the name of each pupil. Elaboration and explanation by the teacher are necessarily reduced to a minimum, lest he invalidate a pupil's mark. Thus the recitation becomes only an oral testing period. The formality of the situation limits pupil discussion to the questions, whereas spontaneity and freedom of expression should be encouraged. Each pupil attempts to outwit the teacher by preparing the answers to the questions he thinks he is most likely to be asked. The inequality of the questions in respect to their difficulty and importance does not provide a common basis for evaluating the responses of the different pupils. Since it is impossible to ask each pupil more than one or two questions, the sampling of his information on the lesson topic is so limited as to make it very unreliable. The forced attention of pupils is very likely to destroy genuine interest in the subject by focusing it upon the mark which is being recorded.

In the event it seems advisable to make a record of the pupils' work in the daily recitation, the teacher can make notations periodically in an informal manner. This procedure makes it possible to use the recitation as a clearinghouse for information and for an exchange of ideas, rather than as a situation in which an attempt is made daily to frighten the pupils into learning.

Notebooks and Written Work.—In connection with many high school courses, it seems advisable to require pupils to keep notebooks in which they record class notes, reports of outside readings, or descriptions of laboratory experiments and demonstrations. While it is feasible for the teacher to inspect notebooks at frequent intervals for diagnostic purposes, it is not necessary to record his evaluation of the notebook in the form of a mark. Frequently a casual examination of the notebook material may reveal the information necessary for guiding the pupil in the subsequent work of the course. In the case of both notebooks and written papers, notations indicating errors should be made in order to assist the pupils in revising the materials. Unless the work on notebooks and other written papers is done in the classroom under the supervision of the teacher, it is difficult to ascertain what weight should be given them in a determination of the final grade. The understandings and other learnings which the pupil acquires as a result of his notebook and other written work should be revealed, not merely on the basis of the materials themselves, but rather in connection with his performance on examinations and his other classroom activities.

Oral versus Written Tests.—Considerable thought has been given by authorities on measurements to the relative values of oral and written tests in programs of evaluation of pupil achievement. In practice, the amount of time given and significance attached to the two types of tests has varied greatly from school to school as well as from one classroom to another. While there is disagreement in regard to the comparative merits of oral and written tests, many teachers believe that both types have an important part to play in achieving the numerous purposes of measurement in teaching.

The advantages of the oral test in the classroom may be summarized as follows:

1. It gives the pupil experience in oral expression.
2. Pupils derive certain benefits from the responses of other pupils.
3. The total number of oral questions answered by a class is greater than those that pupils can write in a given class period.
4. Errors made by pupils can be discovered and corrected immediately in the class period.
5. The visual sense utilized in reading and writing about a subject is supplemented by the use of the auditory sense in an oral test on the same material.
6. The extraneous factors of handwriting and neatness of papers are absent.
7. There is less paper work for the teacher.

As an instrument of measurement, the written test is distinctly superior to the oral test in several important respects, as follows:

1. Since all the pupils of a class answer the same list of questions, the teacher has a fair basis for comparison of test results.
2. Written responses to written questions can be evaluated on a more objective basis than oral responses.
3. By the use of objective types of written tests, responses of each pupil to a large number of questions can be obtained in a class period, thus reducing the unreliability of limited sampling by means of the oral test, in which each pupil has the opportunity of answering only one or two questions.
4. The difficulty and importance of the questions answered by different pupils are equal, which validates marks given on a comparative basis.
5. The written test paper provides a record of the pupil's achievement which can be carefully analyzed for diagnostic purposes.
6. The influence of extraneous factors in testing, such as pupil timidity and handicaps in oral expression, are minimized.

It appears probable that a combination of tests of considerable variety and scope is necessary in an adequate program of testing in the high school.

Announced versus Unannounced Tests.—One feature of the examination system in many high schools is the short unannounced quiz. Some teachers think this type of test is valuable in that it tends to insure more careful preparation of the daily assignment.

The results of the test can be used also as a check on the pupil's preparation. The unannounced quiz should be limited to the daily or other short-term assignment. In the event the teacher uses this type of test, he should inform the pupils in regard to the procedure at the beginning of the course. One of the chief disadvantages of the unannounced quiz is that the opportunity of systematic review is lost.

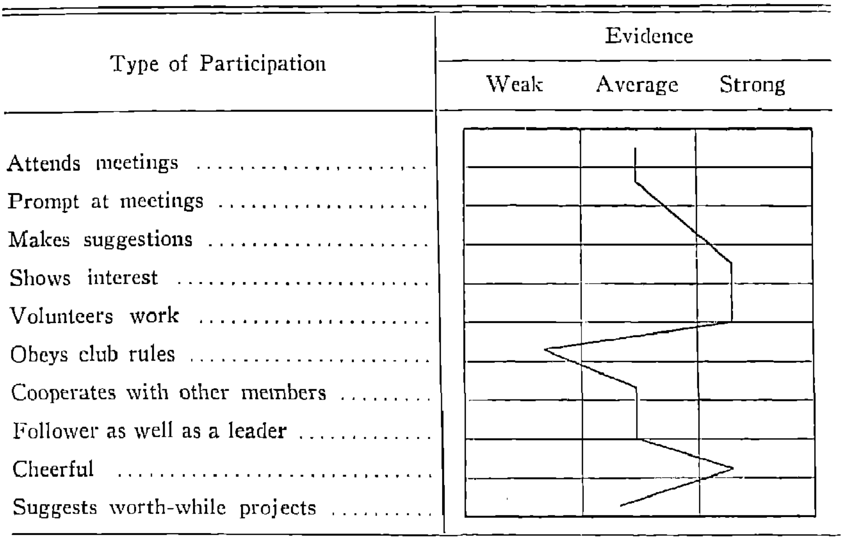
The quiz should require only a small part of the class period, and should not take the place of the longer tests given during the progress of the course. As a teaching device and as a supplement to other forms of testing, the oral quiz can be justified in certain courses. The teaching value of this type of test can be enhanced by pupil participation in scoring the papers and discussion of the results.

Score Cards or Ratings.—In some subjects it is possible to employ score cards and ratings of a finished product which may be taken as a measure of the growth of the learner—not only of his information, but of his understandings and his skills. Ratings are particularly useful in the teaching of art, industrial arts, agriculture, and household arts. Typical of such rating devices are the following for use in measuring clothing construction and in measuring social participation.

Score Card for Rating Dress Construction

I. *Suitability to Individual*		35
Neckline	5	
Color	5	
Trimming	5	
Design of material	5	
General line of dress	5	
Suitability to occasion	5	
Design of garment	5	
II. *General Appearance*		35
Fit of garment	20	
Cleanliness	5	
Pressing	5	
Originality	5	
III. *Workmanship*		20
Seams: width, evenness, suitability	5	
Stitches: length, neatness	5	
Hems: evenness, stitching	5	
Findings Facings : evenness, stitching	5	
IV. *Cost*		10

EVIDENCE OF RESPONSIBLE PARTICIPATION IN SOCIALLY SIGNIFICANT ACTIVITIES



Adapted by Evelyn M. Herrington and Maurice E. Troyer, Syracuse University.

It is a valuable educational experience for members of a class to develop such a rating device and to employ it in rating their own work and that of their fellow learners.

Anecdotal Records and Informal Observations.—Teachers need not rely for data concerning learner growth or status entirely upon situations especially devised for measurement. The more intelligent and observant teacher will be constantly looking for evidences of growth, of maladjustments, and of failure to grow. He will constantly observe the written work of students at their desks, their participation in discussions, their questions, and their performance in laboratory and shop and in extra-classroom situations, with a view to gathering data concerning the growth of the individual pupil. In some subjects, i.e., English and mathematics, it will be possible for him to get information from teachers of other subjects concerning the performance of his learners.

Almost daily he will wish to record his observations of the evidences of growth or lack of it on the part of at least a few of his students. These may be entered in classbooks, in memo books, or in files of pupil data. These observations may occasionally take the form of brief anecdotes such as the following:

In study hall today, George showed his great desire to get attention, particularly from girls, by whispering and clowning for the benefit of everyone about him whenever he thought the teacher's attention was elsewhere. He seems to be a born troublemaker who will be a bad influence in this school. I think the principal and his counselor should call him in and take strong action before it is too late.

3. CRITERIA OF GOOD TESTS AND MEASUREMENTS

Selecting Tests to Use.—In constructing or selecting standard tests and scales for use in schools, careful attention can profitably be given to a consideration of the following criteria:

1. Purpose for which the tests are to be given
2. Validity of the tests for the subject and purpose
3. Reliability of the tests
4. Objectivity of the tests
5. Administrative economy of the tests:
   (a) Time necessary to give them
   (b) Time necessary to score them
   (c) Ease of learning how to give and score them
   (d) Expense
6. Susceptibility to interpretation of results

Purpose for Which Tests Are to Be Given.—Tests vary widely in their usefulness for different purposes. For example, the Holtz Algebra Scales constitute a very convenient device for measuring the results of instruction at the end of a year, or even at the end of a semester, but they should not be used for purposes of diagnosis or prognosis. Similarly, the Douglass Diagnostic Algebra Tests require too much time and expense to permit them to be used economically for the purpose of mere measurement at the end of a year of work. For the purpose of prognosis, none of the above should be used; for this purpose the Lee tests of mathematical ability are much more suitable. Again, the Douglass tests may be recommended for class diagnosis, but are hardly reliable for individual diagnosis unless followed by more detailed testing.

Different tests for the same subject too often test different outcomes of teaching. For testing French classes, the Henmon tests are excellent survey and measuring instruments, but for purposes of prognosis the Wilkins Prognosis Test or the Handschin Test for Predetermining Ability in French are more suitable. Similarly in history, if one wishes to test only information, there are a number of useful tests, but few are of appreciable diagnostic value. The Van Wagenen History Scales and the Barr Diagnostic Tests for United States History are useful for preliminary diagnosis.

Particularly in reading and mathematics, some tests measure power or comprehension, others test rate, and still others test accuracy. Hence, when it is desired to test rate, care should be taken to use a rate test; and likewise if the degree of power is the quality to be measured, rate tests should not be employed.

Validity of the Tests.—Above all, one should know that the test actually tests what it purports to test, and that it tests what the teacher desires to test. Teachers might profitably read accounts of the derivations of the tests and scales being considered and note what data are furnished to show that the tests are valid for the results they are supposed to achieve. This procedure, however, requires too much time and technical ability to be generally recommended.

There are several ways by which one may judge the validity of a test. The simplest way is to examine the material of the test and make a common-sense evaluation of it as a measuring instrument for the subject or function which it tests. In doing this it is essential that the evaluator get in mind or on paper before him the objectives of the course or unit of instruction in terms of types of outcomes desired (e.g., information, understandings, ideals, attitudes, skills) and then see to what extent the test in question measures growth toward the objectives in terms of those outcomes and in proportion to their relative importance. Another procedure is to compare the subject matter of the test with studies or discussions of the objectives and essentials of the subject and with studies of the relative social utility of the items within the course. It is frequently helpful to construct test items as learning progresses and coordinate them when a test is to be given.

The most reliable method of determining the validity of a test, however, is to discover its correlation with a known valid criterion. For example, in the construction of tests for mechanical ability, the authors have usually given all the preliminary test material to a large number of people whose respective mechanical abilities were rather well determined. Some items are found to be as well done by those of low mechanical ability as by those of high mechanical ability, while those are done better and better by individuals of successive higher levels of ability. The first class of items is to be discarded as having little validity and the latter type is retained.

Reliability of the Tests.—By *reliability* is meant the degree to which the measuring instrument gives a constant score for a constant degree of whatever it measures, no matter who scores the test. When a footrule is employed to measure the width of a window, barring gross error on the part of the person doing the measuring, approximately the same result is obtained no matter how many individuals make the measurement or how many times it is made. This should likewise be true with school achievement tests. However, tests differ in the ability to call forth consistent responses from the student. On some tests a pupil's score will vary appreciably from one testing to another and for no apparent reason.

The reliability of a test is best measured by statistical means. If there are two similar forms of a test of equal difficulty, a measure of its reliability is the correlation between the two sets of scores of a group of pupils to whom the two forms of the test have been given, without any intervening instruction or other happenings likely to cause pupils to do better or worse on the second testing. If but one form of the test exists, the coefficient of correlation between scores on two similar halves of the test (usually scores on the odd-numbered items and on the even-numbered items respectively) may be used as a measure of reliability. From this coefficient between scores on the two halves, an estimated coefficient of reliability may be obtained by doubling the coefficient and dividing by 1.00 plus the coefficient. Thus, a coefficient of 0.60 between two halves of a test indicates a reliability of (2 × 0.60) divided by 1.60 or 0.75 for the whole test.

The reliability of test or examinations varies all the way from little above zero up to .90 or .95. In the very large majority of instances it falls between 0.60 and 0.75. Reliability coefficients depend upon a number of factors. When based on the performances of unselected children of a single grade, they are rarely found to be more than 0.90. Tests having reliability coefficients of more than 0.80 for a single grade may be used with confidence. When the reliability is below 0.65, two forms of the test should be combined in order to get reliable scores if the test is used at all. In general, tests having a reliability of less than 0.80 for pupils in a single grade, or 0.90 for a range of three grades, are hardly worthy of use where exact measures of individuals are desired. Reliability coefficients based on the performance of children in more than one grade should be higher than those based on the performance of children of one grade only. Like measures of validity, measures of reliability should be furnished with the description of tests, and should be noted by prospective users. It should be remembered that in using diagnostic tests the reliability of an item or a section of the test is usually materially less than that indicated by the reliability coefficient for the entire test.

Objectivity of the Tests.—One of the essential characteristics and points of superiority of standard tests is the degree of uniformity with which different teachers may score the test papers. This characteristic of a test is its objectivity. Some tests are so devised that it makes no difference who scores the test; barring error, the score will be the same. Everything else being equal, tests which permit of no disagreement between scores are much to be preferred. Where the personal element enters in, or where it is difficult to evaluate the answers to a test, the test can hardly be used safely. Usually this quality of a test may be judged by inspection.

Administrative Economy.—The time required for the pupil to take the test must also be considered, as well as the time required to score it. Some tests are so constructed that all the pupil has to do is to write a single word at the side of the question and in a place provided therein, as "yes" or "no," "true" or "false."

Various devices are employed to keep at a minimum the amount of time necessary to score the tests. One device is to use strips of paper or cardboard with correct answers so spaced as to fall beside the blanks for the answers on the test. These may be placed edge to edge with the test paper, so that the correct answer is close to the pupil's answer and can easily be seen. Another form is the cardboard answer key with apertures which, when the key is superimposed on the test paper, fit directly over the spaces provided for the pupil's answers, thus enabling the scorer to compare the answers on the pupil's test paper with the answers printed at the edge of the openings.

Susceptibility to Interpretation.—To be most valuable, a test must be capable of reasonably easy and illuminating interpretation. Usually one is interested in more than the relative standing of pupils in a class, important as that is for purposes of marks and of counseling. There are two principal approaches to the matter of interpretation—the absolute and the relative. Often it is desirable to know the degree to which learning has approached complete mastery: whether a student can or cannot perform a certain operation properly, whether he does or does not know certain items of information, whether he does or does not understand the meaning of a certain word or of a certain historical or scientific fact. In this case one is not interested in the relative mastery of any given learner as compared to that of other learners.

With few exceptions the teacher is attempting to bring about as high a degree of mastery as possible in view of the limitations of time available and the degree of intelligence and maturity of the learners. He realizes that 100 per cent mastery is not possible for all, if for any. He is also dissatisfied if nearly all or even all reach only a minimum level. He wants each to grow as much as possible. For these reasons he wishes to construct or to select a measuring device which will measure various degrees and amounts of growth. He also wishes to use a measuring device for which there are available data and techniques which will enable the teacher and learner to evaluate growth by means of its measurements.

Most useful for this purpose are data concerning the performance of other individuals on the same measuring instruments under the same conditions. With many standard tests there are furnished such data in the form of percentile norms, i.e., the scores or ratings made by students who rank 95th, 90th, 85th, and so on in a hundred or proportionately in any smaller or larger group of people. To be most useful such norms must possess the following characteristics:

1. They should be based upon at least several hundred cases and preferably several thousand.
2. They should have been obtained under conditions similar to those under which the test is to be given, for example:
   (a) At the same time in the course, e.g., at the end of the first semester, in the middle of the second semester
   (b) From a group of the same general level and distribution of ability as the one to be tested; or if not, then from a group of known general level and distribution of ability so that appropriate allowances may be made.

In interpreting the test scores by means of norms or comparative scores of other classes, consideration should be given to such matters as:

1. The degree to which the teacher has emphasized the objectives or areas emphasized by the test
2. The amount and character of instruction the class may have received in previous years and in other subjects likely to stimulate growth along the lines emphasized by the test
3. The general intelligence of the class or of the particular individual
4. Any unusual distracting or motivating conditions attending the giving of the test

Often teachers of the same subject, in the same city or in different cities, may cooperate in the construction of a test and exchange the scores of their pupils on it, thereby furnishing each teacher with data for comparison and interpretation of the scores of his own pupils. It is also recommended in the case of important tests that teachers of the same subject discuss and interpret the results.

4. TYPES OF PENCIL-AND-PAPER TESTS

For more than a quarter-century we have been using, experimenting with, and improving what have been called "objective" tests and examinations, e.g., true-false and multiple-choice tests and test items. Among the things we have learned are that objective tests are not wholly objective and that "essay" tests may be so constructed and scored as to be less subjective than they ordinarily are. Teachers have discovered, for example, that there may be disagreement upon whether a statement is true or false and upon which is the best answer among several choices presented. They have also had difficulty in constructing objective test items which do not permit different interpretations.

Most serious of all limitations, teachers employing objective test procedures have tended to include too many trivial items (*means* of growth, not *ends*), particularly those measuring the acquisition of information, to the neglect of items measuring understanding, mental skills, attitudes, interests, ideals, and habits. Only recently has anything like adequate attention been given to the matter of constructing objective test items which do measure the other types of outcomes.

Among the more commonly used types of "objective" test items are those discussed in the following paragraphs.

The Simple Statement, or Enumeration Test.—The simple statement exercise resembles the traditional examination question more closely than any other of the new types of examination. Below is an example of such an examination, only a portion of the test being here reproduced.

Write the appropriate word or words in the following blanks in each exercise below.

1. The names of the primary colors on the color chart are:
   (a) ————————, (b) ————————, and (c) ————————.

2. The four elements of design are:
   (a) ————————————
   (b) ————————————
   (c) ————————————
   (d) ————————————
3. The principles of design are:
   (a) ————————————
   (b) ————————————
   (c) ————————————
   (d) ————————————
   (e) ————————————
   (f) ————————————
   (g) ————————————
4. List four means of harmonizing colors.
   (a) ————————————
   (b) ————————————
   (c) ————————————
   (d) ————————————
5. Name the four kinds of line directions.
   (a) ————————————
   (b) ————————————
   (c) ————————————
   (d) ————————————

The Completion Test Item.—This type of examination has one prominent advantage as compared with certain other types of objective examinations, in that it tends to keep guesswork at a minimum and that it calls for recall rather than merely for recognition of correct answers. As usually employed it may not be entirely objective. Equally expert authorities may differ as to the correct answer, as indeed they may on the correct answer to true-false or multiple-choice items. Some sample items follow:

American Government

You will find below a number of statements. In each statement one or more important words have been omitted. Each blank in the sentence shows where a word has been left out. Read each statement carefully; then write in the blank the word which completes the meaning of the statement.

1. The primary purpose for which government exists is the ———— ———— of our lives and property.
2. Citizenship may be acquired by ———————— in this country or by a process of ———————— for natives of other lands.

3. Our National Government derives its authority from the ———— ———— of the United States through our National ————.
4. The legislative power granted to the National Government is vested in a Congress of ———————— houses, the smaller of which is called the ———————— and the larger the ————————.
5. The execution of the laws made by ———————— is intrusted to the ———————— of the United States.

The completion exercise possesses the advantages common to all objective examinations. It also possesses the peculiar quality of the recall type of exercise, namely, that the power to recall the correct answer is tested, as well as the ability to recognize the correct response and to distinguish it from others. It possesses a peculiar shortcoming in that it places a premium upon the ability to form rote or verbal associations. Also, unless the items making up the test are chosen quite skillfully, they are likely to be somewhat indefinite, permit of more than one correct answer, or furnish insufficient data to stimulate the pupil to the correct response, even if he should know it. These pitfalls should be kept in mind when a completion examination is being constructed.

The True-False Test.—The true-false test consists of a number of statements the truth of which the student is asked to affirm or deny. Below is a portion of such an examination.

The Constitution of the United States sets forth:

1. The exact number of justices necessary for the Supreme Court .... Yes..No
2. The exact number of Cabinet officers for the President's Cabinet .... Yes..No
3. The age at which one may exercise the right of suffrage .... Yes..No
4. The President as commander-in-chief of the Army and Navy .... Yes..No
5. An exact minimum age for Senators and Representatives ... Yes..No

Some experts recommend that students be instructed not to make sheer guesses. Sheer guessing increases the relative importance of chance in the scores. The score on a set of true-false items should be calculated by subtracting the number of incorrect answers from the number of correct ones.

The student may be instructed to encircle one of the two words *yes* or *no,* or one of the two letters *T* or *F,* or one of the two words *True* or *False,* or it may be set-up so that he writes in the blanks provided either *True* or *False, Yes* or *No,* + or —, or + or *O.*

The blanks, words, letters, or symbols should be placed in a column at the right or at the left of the respective statements. If placed at the right, the testee may write without having to place his hand over the test paper.

Enumeration exercises in which reasons for the student's answer are requested are sometimes associated with true-false test items. Multiple-choice or rating exercises in which the student checks one of several reasons given, or ranks the reasons in the order of their importance, are also combined with true-false items in some tests.

The Multiple-Choice or Best-Answer Test.—Among the most commonly used of all types of objective examinations is the multiple-choice or best-answer exercise. The task is to select, from three or more possible answers (four or five is probably best), the correct one or the best answer to the question or problem stated, as in the following examples:

A. Engel's law deals with:

———1. the coinage of money
———2. the inevitableness of socialism
———3. diminishing returns
———4. marginal utility
———5. family expenditures

Directions: Select the one correct spelling in each line, underline it, and put its number in the parentheses at the right.

1 deceive	2 diceave	3 decieve	4 deceave ....( )
1 acurate	2 acurrate	3 accurate	4 accurrate ......( )
1 eroneus	2 erroneous	3 erronious	4 eroneos ....( )

A. ( ) An episode that advances the plot is the (1) murdering of a man; (2) kidnapping of a child; (3) stealing of money; (4) fighting of a duel.
B. ( ) Dolly Winthrop is (1) an ambitious society woman; (2) a frivolous girl; (3) a haughty lady; (4) a kind, helpful neighbor.
C. ( ) A chief characteristic of the novel is (1) humorous passages; (2) portrayal of character; (3) historical facts; (4) fairy element.

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1. An embargo is

( ) 1. a law or regulation. 2. a kind of boat. 3. an explorer. 4. a foolish adventure. 5. an embankment.

There are several usable variations of the best-answer type of test. One of these requires selection among a number of correct answers. Sometimes the number of correct answers is stated in relation to the total of possible answers. Sometimes one or more of the answers are correct and the number of correct answers varies from item to item, the learner being instructed to identify all correct answers.

The Matching Test.—The matching test is a variation of the multiple-choice test. An illustration of the matching test is given below.

ART

Write in the blank before each definition the number of the term which corresponds to the definition.

Term		*Definition*
1. Tint	——	Darker than normal color brightness
2. Shade	——	The strength of a color
3. Normal	——	Lighter than normal color
4. Intensity	——	Color at full strength
5. Value	——	The name of a color
6. Hue	——	Harmony based on one color
7. Triad	——	Degree of light or dark
8. Analogous Colors	——	Opposite colors
9. Monochromatic Colors	——	Three colors equally distant on color wheel
10. Complementary Colors	——	Three colors related with a common hue
	——	The grayness of a color

The matching test may take many forms, such as countries—capitals; men—movements; dates—events; causes—effects; elements—atomic weights; synonyms—antonyms; genus—species; and vocabulary—association. A form of the matching test is the ranking or arrangement test in which a given number of items are ranked in the order of time of occurrence, merit, or in accordance with some other criterion. For example, the student may be instructed to: "Arrange, in the order of their happening, the following events by writing the number 1 after the one happening first, the number 2 after that happening next, and so on"; or he may be told: "Of the names of countries listed below write 1 after the name of the largest country, 2 after the next largest, and so on."

Relative Reliability of Various Types of Objective Tests.—In recent years the true-false test has come somewhat into disrepute, only in a small part deserved. The principal weaknesses for which the true-false test has been criticized are (1) lack of reliability, (2) lack of validity, and (3) unintelligent use of teachers.

It is obvious that, item for item, everything else being equal, true-false tests are not as reliable as multiple-choice, matching, completion, or enumeration tests because of the greater chance of guessing the correct answer. On the other hand, in a given period of time a greater number of true-false items can be covered in a test than of other types. Approximately 1½ times as many true-false items can be completed as five-choice, best-answer, or multiple-choice items. Based on a standard unit of time, true-false tests are almost as reliable as other types.

It is difficult to construct true-false objective tests or for that matter any kind of paper-and-pencil test. It is also difficult to construct tests which measure the status or growth of ideals, attitudes, interests, complex mental skills, habits, or understandings—particularly the first three named. Yet they can be devised, and in recent years teachers have been acquiring ability to construct them. True-false and multiple-choice tests which measure specific items of schoolbook information are easy to construct, and teachers have been prone in their hurry to use only those easy to make. It takes time, ingenuity, clear thinking, patience, and practice to construct a pencil-and-paper test that will yield a reliable measure of growth toward all the different types of outcomes involved in the objectives of a given course.

"Essay" Test Items.—Various types of test items are considered as belonging to the classification of "essay" test items. Among these are the following types:[2]

1. *Discussion:* Discuss the early settlement in Virginia.
2. *Description:* Describe the physical characteristics of New England.
3. *Explanation:* Explain the process involved in preparing diphtheria serum.
4. *Narration:* Trace the course of the discoveries of the American continent.
5. *Evaluation (including criticism):* Point out the weak and the strong points in the Articles of Confederation.

The "essay" types of examination materials possess certain weaknesses. Only a few essay items can be included in an examination. The items should therefore be selected with great care in order to constitute a good sample of all the growth which the examination is intended to measure. Essay questions are often open to misunderstanding. Because of the small number of essay questions in any given examination, to misunderstand what is called for and write an answer to a question wrongly interpreted may result in the total test score which is a very misleading measure of the learner's status or growth.

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[2] See Chapter 14 for additional types of questions.

In answering essay questions, students are likely to get lost in writing, wander from the main idea, and distribute their time unwisely. Marks in essay examinations are quite likely to be measures of composition—of ability to interpret questions, to write concisely, and to distribute time wisely. These are outcomes other than knowledge, understanding, general ability, and other results which the instructor has been attempting to achieve.

Suggestions for avoiding these dangers and reducing the effect of the limitations of essay test questions will be offered in Chapter 21.

5. DEVISING MEANS OF MEASUREMENTS

General Principles of Constructing Pencil-and-Paper Tests.—The procedure in constructing an objective examination is summarized in the following paragraphs.

First, determine what is to be covered in the examination, and get in mind the outcomes of teaching which constitute the chief objectives of the material involved; that is, what information, what skills or habits, what ideals or attitudes are aimed at in presenting the material to be tested, and which of these is of most worth.

Next, determine how much time is to be given to the test, and estimate how many exercises may be completed by the pupils in the time available.

Select about one and one half times as many exercises, testing the possession of information, skills, habits, ideals, or attitudes emphasized, as may be given in the time available, consciously attempting to distribute these over the outcomes of the course somewhat in proportion to the importance of each outcome in the ground covered.

In formulating objective test questions or exercises, one of two plans may be employed: *The test exercises may all be of one type,* as true-false, completion, or multiple-response; *or the examination may be made up of different types.* Ordinarily the latter procedure is preferable, since the most effective type of exercise for each item may be chosen on an individual basis. Items should be formulated in the types most appropriate to the achievements to be tested. Items which are not of primary importance and which are difficult to fit into any form may be tentatively set aside to be used only in case they are needed to give balance or to complete the examination. The shorter the question or exercise, the better.

Care should be taken to *formulate exercises in such a way that something more than memory is tested.* Some questions involving reasoning and attitudes should be provided.

Care should be taken to *include some questions which all pupils are certain to answer, and some which very few are likely to answer.* The other questions should range in difficulty between these extremes, with a goodly percentage of questions of average or reasonable difficulty. This precaution is desirable in any examination.

Go over the test exercises carefully, discarding those which are ambiguous or misleading, or which demand elaborate qualification. Reduce the number of test exercises to the desired number, being sure to retain such exercises as will give the test "range," as provided for in the preceding paragraph, and those testing important objectives. Discard those exercises which are least objective and which serve to test powers tested by other questions or exercises. Care should also be taken to preserve proper distribution among the different parts of the material covered.

Rearrange the remaining exercises into groups by type; that is, group all the true-false exercises together, all the multiple-choice together, and so on.

Rearrange within the groups in the apparent order of difficulty, or in some other logical order. The most difficult exercises should not be placed toward the beginning of the test.

In preparing the blank forms for the test, attempt to control the position of the answers, allowing for them preferably along one side of the page to facilitate scoring.

Finally, prepare a key of correct answers in such a form that it may be laid alongside the pupil's paper and thus permit rapid scoring. A cardboard key is very convenient.

Special Suggestions on the Framing of True-False and Multiple-Choice Exercises.—A true-false examination should contain at least fifty or sixty items to be reliable, although of course a smaller number may be employed when the true-false items form part of a test consisting of several types of exercises. The number of true and the number of false statements should not be exactly equal, nor always approximately equal. It is better to vary procedure in this respect, as otherwise students will learn to adapt their answers in order to distribute them equally between true and false. However, not less than 25 or 30 per cent of the statements should be of each type. True and false statements should neither be bunched nor alternated, nor arranged in any systematic order which would give any clue as to which are true and which are false. Care should be exercised to select false statements which are not obviously false, and which will not permit the student to identify the correct answer by eliminating the obviously incorrect ones or by any other process of reasoning which does not involve the possession of the knowledge or skill to be tested. The false statement should in every case be one which the student would be as likely to call true as false if he did not possess the knowledge or other educational outcome which the statement is designed to test.

For example, the statement that "An ant has three legs" is not a good statement to use in a true-false exercise. Most pupils will identify it as false without any reference to how many legs an ant has, because they do not believe that any insect has an odd number of legs. Likewise the statement that "Chicago is the capital of Michigan" may be identified as false without knowing what the capital of Michigan or the capital of Illinois is, because the pupils know that Chicago is in Illinois.

The same care should be observed in the selection of material for a multiple-choice test. It is obvious that no sane person of high school age would identify a man still living, or a man who lived before the discovery of America, as the first man to sail around the world. Here again, the incorrect answer should be one that the pupil might designate as correct in case he does not possess the particular bit of knowledge being tested.

The correct answer should not always occupy the same position, as third in the possible choices, nor should the location of it follow any consecutive pattern, such as fifth, fourth, third, and so on.

In selecting completion exercises, care must be taken to leave only *key* words blank, and to furnish, in the portion of statement given, enough data to constitute a fair test—that is, to designate what is wanted. If this is not done effectively, the test may degenerate into a guessing contest. For example, in the statement: "The first Continental Congress was held in ——————————," the student may conclude, with almost equal reason, that what is wanted is the name of the city in which the first Continental Congress was held, or the name of the building, or the year in which it was held.

In an enumeration test one should attempt to formulate exercises which require a minimum of writing and for which there is only one correct answer, or at least exercises which will permit little difference in scoring between different teachers. Ordinarily it is better to avoid using exercises in the scoring of which it would be necessary to give partial credit to some papers.

Suggestions for Constructing Essay Examinations.—There is a great variation in the reliability and validity of essay examinations. Their quality is dependent very largely upon the amount of attention and skill devoted to application of the following principles and suggestions:

1. Select topics which taken as a whole comprise a good sample of the more important sections of the area of the course which the examination is intended to cover.
2. In stating the topic and the instructions for dealing with it, be specific and clear; for example, if learners are asked "to criticize," they should be told upon what basis or with respect to what. Frequently there should be subordinate or supplementing instructions, as in the following:
   (a) Discuss the Reconstruction Period with particular reference to the negro-white race problem in the South, the effect of reconstruction upon economic conditions in several parts of the country, and the effect upon the alignment of political parties.
   (b) Compare Russia and the United States with special attention to natural resources, forms of government, and nature of the people.

   Rarely if ever should students be asked to "Tell what you know about . . . ."
3. State each question or make each statement so as to measure something besides recall of information, i.e., understanding of the information, its importance, its implications, etc.
4. Word each question or topic so that the student will be likely to write his answers in sections or parts in response to the different points to be discussed.
5. Estimate the time required by a slow student to write out an excellent answer to the question and indicate that amount of time in parentheses after the question.
6. Try the questions out on some disinterested person to see if they will be clearly and accurately understood.
7. Attempt to keep at a minimum the time required for writing answers. It is of great value in essay examinations to call for short, concise answers so that more questions may be asked.

8. The questions should be such as will permit objective scoring as far as possible. This is achieved by planning questions in the manner suggested in 4 above. Questions so planned can be scored against an inventory of the parts required in a perfect answer.

For oral questions, see the discussion and suggestions in Chapter 14. For discussion and suggestions for planning and conducting measurement in special situations, such as rating the product in foods classes, measuring skills in typewriting and shorthand, judging debates and speeches, scoring compositions, etc., the reader is referred to books on the teaching of the special field or subject, such for example as Spafford's *Fundamentals on Teaching Home Economics*.

(Questions, problems, and exercises
will be found at the end of the next
chapter.)

Chapter 21

MEASURING, EVALUATING, AND REPORTING PUPIL PROGRESS (CONTINUED)

6. MEASUREMENT OF UNDERSTANDING

Measures of Understanding and Ability to Use.—A serious limitation of the applications of objective measurement in the last few decades has been the use of tests which place a disproportional emphasis upon detailed information or minute subject-matter skills. While it is possible for true-false, multiple-choice, and other objective-type tests to measure understanding, it is more difficult to construct test items which measure understanding, and in practice to do so is not the rule by any means.

Another undesirable practice in measuring the results of teaching and learning is that of employing test items which measure specific outcomes rather than those which measure ability to employ materials from various parts of a large unit, various parts of a subject, or even various parts of several subjects, as one must in meeting the needs of life. Test materials which call for reorganization, understanding, and application are not commonly used.

In recent years there has been a tendency to correct the limitations mentioned in the foregoing paragraph. More "comprehensive" examinations and test items are now used, and more attention has been given to the measurement of understanding.[1]

Another encouraging tendency has been the development of means and programs of measurement which measure the degree and extent of growth toward the objectives of instruction and learning. For example, in *The Measurement of Understanding*,[2] several groups of authors in discussing the measurement of understanding in the various subject fields first state the objectives of the particular subject field and then give examples of methods of measuring growth toward those objectives. This is in marked contrast to the common practice of measuring the ability to recall items of subject matter.

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[1] See, for example, the General Educational Tests developed and used by the United States Armed Forces Institute and tests of the type described and illustrated in *The Measurement of Understanding*, by Brownell and others, Part I of the *Forty-fifth Yearbook* of the National Society for the Study of Education.

[2] William A. Brownell, Harl R. Douglass, Warren G. Findley, Verner M. Sims, Herbert F. Spitzer, and collaborators, *The Measurement of Understanding, Forty-fifth Yearbook*, National Society for the Study of Education, University of Chicago Press, Part I. Throughout this section of this chapter all references to published material and all illustrative examples are taken from or based upon this yearbook.

Measurement and the Objectives of Instruction—Social Studies. —In approaching the measurement of understanding in the social studies, Anderson, Forsyth, and Morse[3] first state that "there is general agreement on three broad fields which are directly related to the development of understanding" in the social studies, namely:

1. Acquiring functional information
2. Analyzing social problems
3. Practicing desirable social relationships

These, they point out, in turn break down into several objectives, as follows:

1. *Acquiring Functional Information*
    (a) Understanding the special vocabulary of the subject
    (b) Understanding chronological relationships
    (c) Understanding maps
    (d) Understanding graphs and tables
2. *Analyzing Social Situations*
    (a) Knowledge of important concepts, generalizations, and findings as a prerequisite to reaching valid conclusions about social problems
    (b) Locating, selecting, organizing, and evaluating information
    (c) Drawing conclusions and stating them effectively
    (d) Applying social facts, generalizations, and value principles to new problems
3. *Practicing Desirable Social Relationships*
    (a) Understanding and developing values consistent with the democratic way of life
    (b) Understanding the social implication of specific facts and types of behavior
    (c) Applying democratic values consistently in judging the desirability of policies and courses of action
    (d) Understanding the importance of social action to further the solution of social problems, and being willing and able to take such action

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[3] *The Measurement of Understanding*, Ch. V.

The authors then proceed to illustrate how growth toward each of these objectives may be measured. For example, chronological understanding may be measured by a number of devices, one of which follows:

Directions: What is the order in which the following events occurred: (1) A C D B? (2) A C B D? (3) D A B C? (4) D A C B?

A. The steam engine was invented.
B. People began to ride on trains.
C. Robert Fulton made his first voyage by steamboat.
D. The first telegraph message was sent.

Knowledge of important concepts, generalizations, and findings may be measured by such items as the following:

Directions: Write in the parentheses the number of the best answers to each question or statement:

( ) As the number of mechanical inventions increases and society becomes more complex: (1) Each worker does more specialized work. (2) Each person takes care directly of more of his needs. (3) People depend less on each other. (4) Each worker does a greater variety of work.

( ) Which has been a result of this country's policy of maintaining a high protective tariff? (1) Higher prices for domestic goods; (2) lower prices for foreign goods; (3) increased foreign trade; (4) higher prices for farm products sold in foreign markets.

( ) The United States and the U. S. S. R. are great world powers. Which statement about the two countries is *not* true? (1) The U. S. S. R. has the larger population. (2) U. S. industry has the greater productive capacity. (3) Both countries are leading maritime powers. (4) Both countries are comparatively self-sufficient.

The ability to use appropriate sources may be measured by such items as:

Directions: Put an *x* in front of the sources which are primary sources:

The Treaty of Versailles
Gone With the Wind, by Margaret Mitchell, a book depicting conditions in the South at the time of the Civil War
The newspaper text of one of President Franklin D. Roosevelt's "fireside chats," a series of radio broadcasts
A history textbook
The Dictionary of American Biography
A photograph of the burning of the airship *Hindenburg*

Directions: Number the sources listed in the order of their value in studying about the living conditions of the ancient Romans:

An epic poem, written by a Roman, which mentions some family customs
Excavations of the buried Roman city of Pompeii
A novel about the fall of Pompeii

The degree to which a pupil possesses desirable social attitudes, the authors point out, may be measured by:

1. Anecdotal behavior records such as the following:

   October 10. John lingered after school today, and in our conversation it came out that he can see no reason for learning about the people of Mexico. He said, "My father had Mexicans working in the orchard last summer. He says they're no good—lazy and dirty. My mother says she won't have them around this year if all the fruit rots on the trees!"

   November 15. In the discussion of transportation problems in Peru (following the showing of a film), John remarked, "Well, why don't they get busy and build some railroads? These mountains aren't worse than the Rockies, and we have trains running over them."

2. Rating scales, including such ones as:

   Haggerty-Olson-Wickman, *Behavior Rating Schedule,* Yonkers, New York: World Book Company.

   Eugene R. Smith, *Behavior Description Form,* Chestnut Hill, Massachusetts: Beaver Country Day School.

   Winnetka Scale for Rating School Behavior and Attitudes, Winnetka, Illinois: Winnetka Educational Press.

Among the types of items suggested by Anderson, Forsyth, and Morse[4] for inclusion in rating scales on social attitudes are the following:

The following problem situations were included in a rating scale designed to measure certain aspects of school citizenship: tolerance, school rules, school responsibility, courtesy, cooperation and social participation.

A minority of the pupils have taken an unpopular position on a debatable question. They insist on stating their arguments. Would this pupil help create a situation in which they might express their opinions?

Very likely	Likely	Uncertain	Unlikely	Very unlikely
5	4	3	2	1

A visitor is walking down the hall, apparently looking for a certain classroom or teacher. He walks up to a group of pupils who have a chance to note that he needs direction. Would this pupil be likely to ask the visitor if he might be of service to him?

Very likely	Likely	Uncertain	Unlikely	Very unlikely
5	4	3	2	1

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[4] *Loc. cit.*

3. Measures of attitudes by such items as the following: (The simplest form of attitudes test is a list of stimulus words. The pupil is asked to underline each word which he does not like or which bothers or disturbs him.)

Sunday School
Germany
Cigarette
Republican
Alcohol
Democrat
Russia
Capitalist
Labor union
Socialist
Communist
War
Soldier
Invasion
Strike
Peace
Mob
Negro
Black market
O. P. A.

The following are some uses which may be made of the free-response type of attitudes tests:

> What are your feelings about war? (Use desired stimulus words, as for example, *Japan*, *Russia*, *Negroes*, and so on.) Write down all the things you feel about war, and put down your reasons for feeling that way.

In analyzing the answers to such questions, the teacher (1) makes a count of adjectives and (2) notes attitudinal words expressing love, hate, fear, and so on. He may also construct attitudes scales based on the free responses.

On attitudes scales used at the upper-grade levels the pupil often is asked to check for each item or statement the one of five responses which states most accurately how he himself feels about it: *Strongly agree. Agree. Undecided. Disagree. Strongly disagree.*

> No group should be ridiculed because of its religious practices. (*Tolerance.*)
>
> A school strike would be a good way to protest against an undesirable school regulation. (*School rules.*)
>
> A student should pick up another student's waste paper without being asked by the teacher. (*School responsibility.*)
>
> No one should be expected to pay attention in class to anything which is uninteresting. (*Courtesy.*)
>
> A difficult task should be worked out by a group of students. (*Cooperation.*)
>
> The chance to attend a school party thrills me. (*Social participation.*)

Measurement and the Objectives of Instruction—Science.—In science, Heil, Kambly, Mainardi, and Weisman[5] state that there are *factual* understandings and *method* understandings which ought to be measured as very important points of growth resulting from the study of science:

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[5] *The Measurement of Understanding,* Ch. VI.

FU-a. Giving specific illustrations or examples of factual generalizations and concepts of science

FU-b. Using factual generalizations for the purpose of making predictions in new problems

FU-c. Using factual generalizations for the purpose of explaining a given phenomenon, or for the purpose of judging the validity of a given prediction, conclusion, course of action, or practice

FU-d. Using factual generalizations in formulating hypotheses

FU-e. Using factual generalizations as one basis for judging the validity of sources of information

Method Understandings. An understanding of generalizations concerning the method employed in scientific analysis and problem-solving may be defined with respect to such procedures as:

MU-a. Making proper qualifications when interpreting data; this general characteristic of behavior evidencing understanding of method in science involves the following procedures: cautious extrapolation and interpolation, recognition of the adequacy or inadequacy of a sample of data, care in reasoning by analogy, avoidance of the practice of imputing purpose or a predetermined plan on the basis of data, and the establishment of relations between data and value judgments

MU-b. Identifying necessary and unstated assumptions involved in a conclusion, prediction, course of action, or practice

MU-c. Recognizing and using defensible arguments or reasons when justifying a prediction, conclusion, course of action, or practice

MU-d. Identifying valid cause-and-effect relationships when interpreting a given phenomenon

Those readers interested in modern trends in measurement in science teaching are urged to read the chapter by Heil, Kambly, Mainardi, and Weisman and to note the various devices available for measuring understanding in science.[6]

Measurement and the Objectives of Instruction—Other Subjects.—In other chapters in *The Measurement of Understanding* procedures are described and illustrated for measurement to yield measures of growth toward the objectives of each subject field, particularly those objectives which are classified as understandings. The great variety of test items now available and the rich possibilities of testing for measurement of understanding arouse regret that teachers in the past have to a great extent been content to measure petty details of subject-matter information.

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[6] *The Measurement of Understanding,* pp. 177-180.

In the discussions of measurement of understanding in the various subject fields not only are the more conventional types of tests discussed and illustrated, e.g., true-false, multiple-choice, completion, enumeration, matching, etc., as instruments for measuring understanding, but others not so commonly used are discussed and illustrated. Among the latter may be mentioned:

Class opinions of work done by fellow learners
Systematic and recorded observations of pupil attitudes and their behavior
Records showing extent and choice of readings and music listening
Self-appraisals
Check lists of interests and activities
Interviews with learners and parents
Health examination records and reports from physicians, dentists, and nurses
Diaries
Samples of creative work
Records of participation in out-of-school activities
Ratings by self and by fellows, often involving score cards
Observation of learners at work, at play, and at study
Learner's comments on plays, fiction, music, clothing, conduct of others, etc.
Especially devised tests for controlled situations, e.g., test on table-setting
Analysis of a family situation
The examination of laboratory notes, records, and reports
Watching learners operate machines requiring judgment and understanding of principles
Having student draw and explain diagrams, graphs
Having students make explanations, describe operations, demonstrate principles in class and on paper
Use of diagrams in prepared tests
Controlled use of essay tests

It should not be overlooked that each of the more commonly used types of test items may be used to measure understanding. The following paragraphs give some examples for purposes of illustration.

Use of True-False Items.—1. *To Measure Ability to Identify Cause or Effect.*[7]

In a radio broadcast the following story was told by the speaker: "A little mining town in Pennsylvania gets all of its water from a clear mountain stream. In a cabin on the bank of the stream above the town one of two campers was sick with typhoid fever during the winter. His waste materials were thrown on the snow. In the spring the melting snow and other water ran into the stream. In several days after the snow melted typhoid fever and death struck the town. Many of the people became sick and 114 people died." The speaker then said that this story showed how the sickness of one man caused sickness and death among many people.

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[7] "Evaluation of School Broadcasts," *Bureau of Educational Research Bulletin*, Ohio State University (mimeographed), No. 1.

Part A. Direction: Below is a list of statements about the story. If you were to say that the man's sickness caused the sickness and death in the town, you may believe some or all of the statements. If a statement says something that an intelligent person should believe, then mark it as *True.*

Part B. Direction: If you were to decide that the man's sickness caused the sickness and death in the town, you would want to be sure about several things before you made that decision. Read the statements below again and check (√) the three which you believe are the most important to be sure about before you should decide that *the man's sickness caused the sickness and death in the town. Do not check more than three.*

STATEMENTS

Part A:

I believe the statement is true:

Part B:

YES	NO			
____	____	(a) Water in mountain streams usually becomes pure as it runs over rocks.	____	(a)
____	____	(b) Typhoid fever germs in drinking water may cause typhoid fever.	____	(b)
____	____	(c) All of the drinking water of a small town like this one came from the mountain stream.	____	(c)
____	____	(d) In a small town like this one there would not be nearly as many people sick at the same time with typhoid as the story tells.	____	(d)
____	____	(e) Typhoid germs were the only kind of germs in the water.	____	(e)
____	____	(f) There was no other possible way of getting typhoid—such as an impure milk supply in the town.	____	(f)
____	____	(g) Typhoid fever germs did not get into the stream from some source other than from the sick man.	____	(g)

STATEMENTS (*continued*)

Part A: *Part B*:

I believe the statement is true:

YES NO

____ ____ (h) A person by himself, like the camper, can get typhoid. ____ (h)

____ ____ (i) Typhoid fever would break out in several days after the snow melted. ____ (i)

____ ____ (j) The typhoid fever germs are not killed when thrown on snow. ____ (j)

2. *To Measure Ability to Interpret Relationships.*[8]

Example: The students in a health class were studying the number of hours of sleep needed by boys and girls. One student brought in the table at the right showing the number of hours of sleep needed at several different ages. The students noticed some definite relationships between pairs of numbers.

Directions: Study the table and the statements below. Suppose the facts stated in the table are true. If you *agree* with a statement which follows, put *A* on the line by the statement. If you *disagree* with a statement, put *D* on the line. If you can neither agree nor disagree, but are *uncertain,* put *U* on the line by the statement.

Age (A)	No. of Hours (H)
6	14
8	13
10	12
12	11
14	10
16	9

____ (1) As the age increases from 6 to 16, the number of hours of sleep needed decreases.

____ (2) The number of hours of sleep needed at any age is greater than the age.

____ (3) In this table the ratio of the number of hours of sleep to the age is constant.

____ (4) A 4-year-old should have 15 hours of sleep.

____ (5) A 12-year-old only needs about half as much sleep as a 6-year-old.

____ (6) From age 6 to age 16, for every 2 years that your age increases you need one hour less sleep.

____ (7) A person 30 years old needs very few hours of sleep.

____ (8) If the number of hours of sleep needed is subtracted from 17, the result is half the age.

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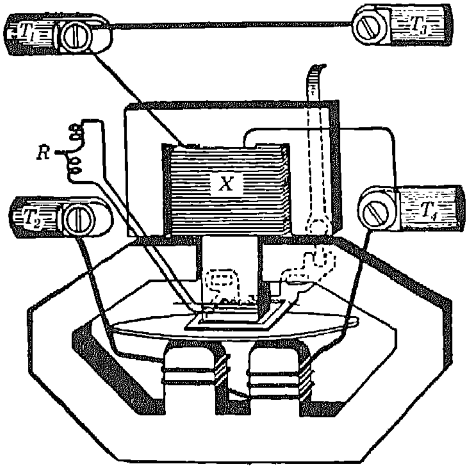
[8] Maurice L. Hartung and Harold P. Fawcett in *The Measurement of Understanding,* p. 171.

Use of Multiple-Choice Items.—1. *To Measure Ability to Recognize Logical Implications of Related Propositions.*

Example: Check the statement that indicates the correct answer to each question based on the following drawing.[9]



1. What is the function of the coil marked *X?*
   (a) It produces a magnetic flux proportional to the line voltage.
   (b) It exerts a retarding torque on the rotating disc.
   (c) It adjusts the instrument for lag.
   (d) It exerts a torque proportional to the load.
2. What is the effect on the rotating disc of placing a strong magnet near the rotor?
   (a) The speed of rotation is retarded.
   (b) The speed of rotation is accelerated.
   (c) The speed of rotation is unchanged.
   (d) The speed of rotation is either retarded or accelerated, depending on location of the magnet.

2. *To Measure Growth in Ability to Reason from Cause and Effect on the Basis of Generalizations.*[10]

Indicate by check mark the word or words which complete each sentence correctly.

1. Knots in lumber are caused by:
   (a) boring insects
   (b) branches

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[9] Robert M. W. Travers, William N. Jenninger, and Frank E. Stewart in *The Measurement of Understanding,* pp. 290-291.

[10] Morris M. Proffitt, E. E. Ericson, and Louis V. Newkirk in *The Measurement of Understanding,* p. 316.

(c) winter injury
(d) decay
(e) unequal growth

2. A bimetallic thermostat operates because:
   (a) metals expand when heated
   (b) different metals expand at different rates when heated
   (c) two metals will conduct electric currents at different rates
   (d) a voltage is produced between the junctions of the two metals when one junction is heated

Use of Matching Items.—1. *To Measure Interpretation of data.*[11]

The table below shows the combined expenditures of all state governments in the United States for various governmental services. Amounts are in thousands of dollars.

Type of Expense	1910		1920		1930	
	Amount	Per Cent of Total	Amount	Per Cent of Total	Amount	Per Cent of Total
1. General government expenses	$ 43,400	11.7	$ 74,053	10.5	$ 125,000	9.1
2. Protection	19,425	5.3	32,000	4.6	72,000	5.4
3. Health	20,302	5.4	28,475	4.2	41,450	3.1
4. Recreation	2,162	0.5	4,820	0.6	9,512	0.7
5. Highways	58,300	15.9	125,400	18.2	292,441	21.3
6. Welfare	86,621	23.4	121,850	17.6	214,500	15.1
7. Education	148,265	37.8	315,122	44.3	591,240	45.3
	$378,475	100.0	$701,720	100.0	$1,346,143	100.0

For the purpose of checking each of the statements at the end of this problem, the data above may be interpreted in one of the five following ways:

(1) They are sufficient to make the statement true.
(2) They are sufficient to indicate that the statement is probably true.
(3) They are not sufficient to indicate whether there is any degree of truth or falsity in the statement.
(4) They are sufficient to indicate that the statement is probably false.
(5) They are sufficient to make the statement false.

Mark each of the following statements with the number of one of the foregoing statements which indicates your interpretation of the data in the table.

( ) In 1935 less was spent for general government expenses than for highways.

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[11] Howard R. Anderson, Elaine Forsyth, and Horace T. Morse in *The Measurement of Understanding,* p. 94.

( ) The highway expenditures of New York, Ohio, and Illinois together were at least twice as large in 1930 as in 1910.
( ) The large increase in state expenditures for education between 1910 and 1930 was mainly due to the increase in high-school enrollment.
( ) In 1930 more than five times as much money was spent for highways as for health.
( ) Our state governments do not spend a large enough portion of the taxpayer's money for health.

2. *To Measure Ability to Give Examples of Generalizations.*[12]

Exercise 1. Are you learning to recognize examples of generalizations? From your work in this course you have had the opportunity to summarize many of your experiences in the form of generalization. Four of these generalizations are listed below as *A, B, C,* and *D.*

A. Public hygiene is mainly useful in prohibiting acute infectious diseases.
B. Difficulties created by the size of large cities are often met by applied science.
C. Institutions and patterns tend to remain fixed as the conditions which created them change.
D. Individual hygiene is mainly concerned with the prevention of chronic diseases.

The following statements may or may not represent illustrations of these generalizations. In the appropriate columns to the left check those which you believe are illustrations of these generalizations.

A	B	C	D	STATEMENTS
____	____	____	____	(a) Smallpox is now a relatively rare disease.
____	____	____	____	(b) In present-day practice, most people are buried in cemeteries.
____	____	____	____	(c) Many people ride on subways.
____	____	____	____	(d) Children work in factories.
____	____	____	____	(e) Millions of dollars are spent each year for patent medicines.
____	____	____	____	(f) Very many cases of syphilis are present in the United States.
____	____	____	____	(g) The sick child is sent home from school.
____	____	____	____	(h) Large milk trucks and trailers are often observed on the road.
____	____	____	____	(i) A person doesn't worry about the water he drinks from a faucet.

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[12] Louis M. Heil, Paul E. Kambly, Marcus Mainardi, and Leah Weisman in *The Measurement of Understanding,* p. 109.

Use of Other Special Types.—Many other types and combinations of types have been developed to measure understanding. Some illustrative examples follow.

1. *To Measure Ability to Use Principles Underlying Manipulative Techniques of Mathematics.*[13]

Example: In the first column below is a list of algebraic expressions. Opposite each and in the second column is a new expression obtained from the original. (Pay no attention now to the column headed *Rule.*)

If the new expression is always *equal* to the original, put a check mark (√) in the third column. If the new expression is *not* always equal to the original, put a zero (0) in the third column.

Now fill in the column headed *Rule.*

Below is a list of rules or principles used in algebra. Put, in the parenthesis of the fourth column, the letter of the rule (A, B, etc.) which applies to each problem. If none of the rules seems to apply, leave the parenthesis blank.

List of Rules. [Here would appear statements of principles of the type illustrated by statements A, B, C, and D, in the last previous example.]

	Original	New	Put Check (√) or (0) Here:	Rule
(1)	$\frac{21a}{24a}$	$\frac{7}{8}$		( )
(2)	$\frac{a}{b}$	$\frac{a+x}{b+x}$		( )
(3)	$\frac{a^2-b^2}{a-b}$	$a-b$		( )
(4)	$\frac{5}{x}$	$\frac{5v}{xy}$		( )
(5)	$\frac{a+b}{a+c}$	$\frac{b}{c}$		( )
(6)	$\frac{mr+ms}{nr+ns}$	$\frac{m}{n}$		( )

2. *To Measure Fluent, Accurate Perception of Word Forms.*[14]

To pupil: Read the following paragraph aloud.

The sun pierced into my large windows. It was the opening of October, and the clear sky was of a dazzling blue. I looked out of my window and down the street. The white houses of the long, straight street were almost painful to the eyes. The clear atmosphere allowed full play to the sun's brightness.

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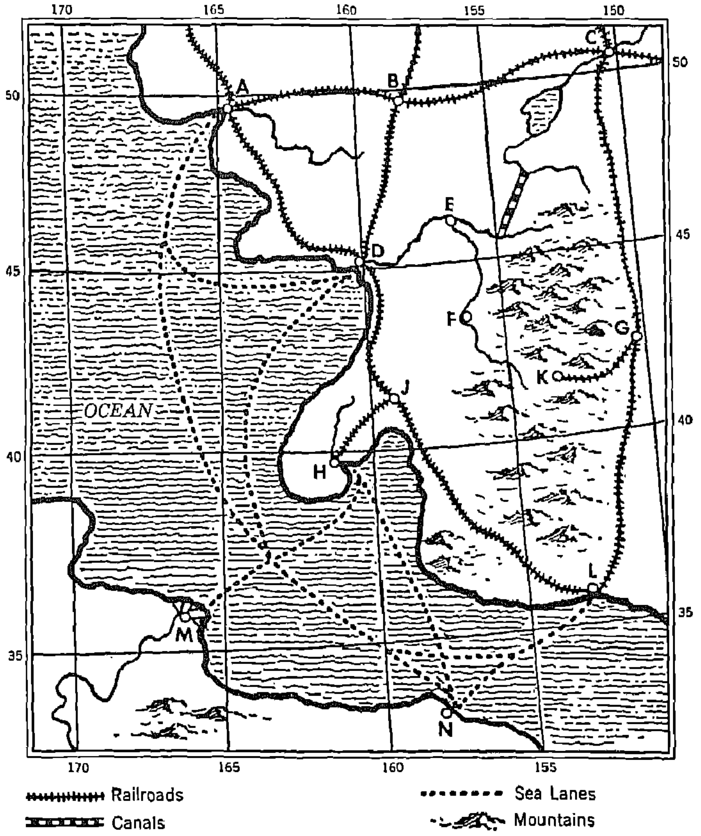
[13] Maurice L. Hartung and Harold P. Fawcett in *The Measurement of Understanding,* p .165.

[14] Harry A. Greene and William S. Gray in *The Measurement of Understanding,* p. 193.

Directions for evaluation: If a word is wholly mispronounced, e.g., ("atmosphere"), underline it. If a word is partly mispronounced (as "pierced," "allowed," "straight," "dazzling"), mark it. Mark insertions, as in the case of "clear down the street"; omissions, as in the case of "of," and "al" in almost; substitutions, as in the case of "many" for "my"; and repetitions, as in the case of "to the sun's." An analysis of the types of errors made will reveal much concerning the nature and extent of the reader's perceptual problems.

3. *Map Reading and Understanding Graphs.*[15]

The map below is from the New York State Regents Scholarship Examination—1944 Series, and the following multiple-choice questions from that examination refer to the map.



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[15] Anderson, Forsyth, and Morse in *The Measurement of Understanding,* pp. 82-86.

[1] In what direction is city C from city G? (1) due north; (2) slightly west of north; (3) northwest; (4) slightly east of north; (5) northeast.

[2] Which of these cities would receive most hours of daylight on December 15th? (1) A; (2) C; (3) D; (4) J; (5) L.

[3] By what route would machinery from city C probably be shipped most cheaply to city N? (1) C-G-L-N; (2) C-B-A-N; (3) C-E-D-N; (4) C-B-D-N; (5) C-B-H-N.

[4] If prevailing winds blow from the west, least rainfall may be expected about city: (1) A; (2) F; (3) G; (4) M; (5) N.

[5] Temperature changes will tend to be most rapid near: (1) A; (2) B; (3) D; (4) J; (5) L.

[6] What agricultural product might be produced in large quantity near city B? (1) wheat; (2) cotton; (3) sweet potatoes; (4) rice; (5) bananas.

[7] Of the following, the city with the lowest mean temperature is: (1) F; (2) G; (3) H; (4) J; (5) K.

Instructions for the test[16] based on the price graph on the next page are: "In this (imaginary) graph, Year 16 refers to a year 6 years after Year 10, Year 17 to the next year, and so on. Assume that the period covered lies somewhere between 1900 and the present time. In answering these questions, draw inferences wherever possible on the basis of your knowledge of changes normally associated with the changes shown in the graph."

Two sample questions follow:

[1] How much higher were prices in July of Year 18 than they were in January of Year 16: (1) 33% higher? (2) 50% higher? (3) 66% higher? (4) six times as high?

[2] Which probably decreased in the period covered by the graph: (1) unemployment? (2) wages? (3) dividends? (4) interest rates?

Increasing in use, particularly by teachers of physical and health education, social studies, home economics, and agriculture, are various records of habits and pupil performance—e.g., in health education, various types of educational growth relative to the following objectives should be measured by means of observation of learner responses:[17]

1. Interest in health advancement for the community
2. Physical health related to mental and emotional health

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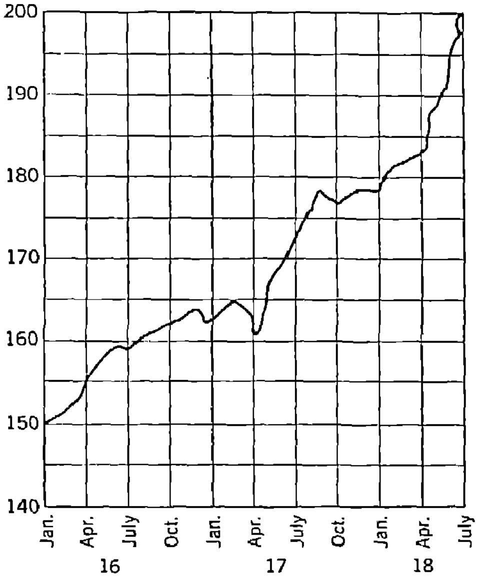
[16] From Test Two, "Interpretation of Reading Materials in the Social Studies," one of the tests of general educational development used by the United States Armed Forces Institute. See Nelson B. Henry, editor, *The Measurement of Understanding, Forty-fifth Yearbook,* National Society for the Study of Education, p. 85.

[17] Based on discussion by Mabel E. Rugen and Dorothy Nyswander in *The Measurement of Understanding,* Ch. XI.

3. Organizing time for balanced living; sleep and rest
4. Responsibility for own health
5. Well-balanced daily diet; sanitary handling and care of foods
6. Health examinations; correction of defects; health problems
7. Immunization; prevention of communicable disease; citizenship; the common cold
8. Nature of the human organism; physiological processes; sex education; human relationships
9. First aid; prevention of accidents and home care of illness and accidents
10. Drugs, treatment; dangers of self-diagnosis; family health services, and consumer advertising
11. Consumer advertising of health products; public health and safety

GENERAL RETAIL PRICE INDEX

December, Year 10 = 100



As the authors of *The Measurement of Understanding* point out, teaching and learning are influenced markedly by the character and interpretation of tests and examinations. *The learner directs his efforts with an eye to a good showing of growth along the lines which will be measured.* Indeed teachers tend to give emphasis to various materials and outcomes of learning in proportion to the relative emphasis on the means and program of measurement.

The authors of *The Measurement of Understanding* conclude with the following statement of the more important things which need to be done in moving toward measurement of understanding:

1. There must be a more general acceptance of the school's responsibility for developing and measuring growth with respect to outcomes which involve understanding—a more general acceptance together with a real attempt to do something about it.
2. The understandings which are essential to each subject-matter area need to be identified and to be made intelligible to teachers.
3. Teachers' confidence in their ability to assess evidence of understanding, a process which is necessarily subjective, must be strengthened.
4. Teachers must learn what kinds of behavior signify the attainment and the nonattainment of outcomes which involve understanding and must learn the conditions under which this behavior may be so interpreted.
5. In looking for evidence of understanding there is a need to broaden the base of the observations by employing evaluative procedures which go beyond the usual kinds of paper-and-pencil testing.
6. Research must be undertaken to improve many evaluative procedures and techniques which are now employed spasmodically, clumsily, and uncertainly.
7. Textbooks on classroom evaluation must give more attention than is commonly given to the need for evaluating understanding and to the procedures suitable for this task.[18]

7. Suggestions for Giving and Scoring Examinations

If at all possible, the tests should be hectographed or mimeographed, so that each pupil may have his own copy. It is a great saving of time over the method in which each student copies the exercise from the board. For small classes enough copies may be obtained by means of typewritten thin-paper carbon copies. Every high school should possess a mimeograph, or several hectographs. A hectograph of four-sheet size may be obtained from any school supply company for about five dollars. Many teachers prefer to own such a duplicating device and to keep it in their rooms, along with their books and typewriter. A good piece of work on a hectograph should yield thirty to thirty-five copies from one operation.

Where no mimeograph or hectograph is available, the questions or exercises may be read aloud to the class. The students number their responses to correspond to the number of the item in the test.

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[18] *The Measurement of Understanding,* Ch. XVII.

If a true-false test is being given, the student may write merely the word *true* or the sign + for those statements which he believes to be true; and *false* or the sign — for the others, numbering the answers in consecutive order. If a multiple-response test is being given, the student will write the response he believes to be best. If there are more than three responses, they should be read several times. Completion tests also may be dictated. Care must be taken to be sure that the numbers of the pupils' responses correspond to the numbers of the test items.

Pupils should be instructed either not to guess at all or to guess at each answer which they do not know, leaving no blanks. The instructions given on this point depend upon what scoring device is to be used.

Suggestions for Giving Different Types of Written Tests.—In giving tests, the instructor should keep uppermost in mind that he wishes to get a good measure of the growth of his learners toward objectives of the course and not to measure ability to work under stress of excitement or fear or to work rapidly. An atmosphere of quiet and relaxation should prevail as far as possible.

A number of miscellaneous suggestions are worthy of consideration. As stated previously, care should be taken to prevent cheating. A spirit of confusion or hurry is to be avoided. Ordinarily rate tests or time-basis tests are not advisable. Instructions should be very brief, in most instances consisting only of a few sentences, and should appear on the test sheets. Questions from the students while the examination is in progress should be discouraged. The examination should be largely self-explanatory.

Scoring Objective Examinations.—There are several possible procedures in scoring true-false items. One plan, quite widely used, involves correction for the guessing factor. When this plan is used, students should have been instructed to try all questions or exercises, guessing at the answers which they do not know.

Take, for example, a true-false or a yes-no test of fifty items on which a student has scored 42. Eight items are wrongly answered. It is assumed that these have been guessed. As there is a fifty-fifty chance of guessing right, it follows then that the most likely number of items guessed at was sixteen, or twice the number guessed wrong. It should not be overlooked, however, that rarely will guesses prove to be 50 per cent right and 50 per cent wrong, especially in cases of small numbers of guesses. It is not unusual for a pupil to guess right, or wrong, as often as twelve or more times in sixteen attempts. Thus the formula devised for scoring true-false or other two-response tests is expressed as:

$$\text{Score} = N - 2W\text{; or Score} = R - W$$

where N is the number of items in the test, R is the number of correct responses by the pupil, and W the number of incorrect responses.

In a three-response test a pupil has one chance in three of guessing right. If guesses are made, there should be one correct response for every two incorrect responses. Hence the most likely number of the correct answers which were hit upon by guess is one-half the number of incorrect responses. The formula employed now is:

$$\text{Score} = \text{R} - \frac{W}{2}$$

For a four-response test the formula becomes:

$$\text{Score} = \text{R} - \frac{W}{3}$$

The general formula is:

$$\text{Score} = \text{R} - \frac{W}{x - 1}$$

in which x represents the number of possible responses. While this formula furnishes the *most likely* score, it is quite likely that one will guess correctly a few more or a few less than the number due to chance. To the extent that this happens the score assigned is not an accurate index of the ability of the pupil. There has been a growing tendency not to take guessing into account in scoring best-answer tests in which there are furnished four or more alternative answers, if they are so constructed as to include any possible choice which is obviously not likely to be the best answer.

Students should be instructed not to make sheer guesses on true-false items and to guess only if they feel they can make a guess which has better than a fifty-fifty chance of being right. The more guessing that is done, the more likely it is that the student's score will be spuriously high or spuriously low.

It is also true that the relative standing of the pupils would not be changed if one simply took the number of correct answers as the score. There is a distinct advantage in following this latter procedure in the case where a test consists of more than one variety of test exercises—for example, a section of five-response items, a section of three-response recognition items, a true-false series, and a completion exercise—or some similar combination.

Scoring Essay Tests.—One of the most important ways to increase the objectivity and hence the reliability and functional validity of an essay test is to prepare in advance an answer key for each question which includes all of the more important points which an excellent or near perfect answer would include. With the key prepared carefully in advance, the instructor can then score each paper on a relatively objective basis depending upon the number of points adequately treated in the pupil's answer. Before starting to score the paper the instructor may find it useful to pre-score a few papers' answers on each question with a view to testing out his key. Frequently the key is revised after reading a few answers. If the instructor wishes, he can weight the points, allowing 3 for a near-perfect answer and 2 and 1 for partial answers on the more important points, 2 for good answers and 1 for partial answers on less important points, and 1 for the good answers on least important points.

To keep the standards constant for all papers and the same on each question and also to keep at a minimum the influence of fatigue or other factors which might become less or greater during the marking of the papers, many teachers mark one question throughout all the papers, then another reversing the order of the papers, and so on.

Weighting Test Questions.—For the purposes of measurement there is not much to be gained by assigning different weights to different test questions, especially if the examination consists of a relatively large number of items or questions. If there are as many as ten questions and the rating of the highest to the lowest weight is no more than 3 to 1, the only purpose served by employing weights is to satisfy the feeling of students or the teachers that more credit should be allowed for the important or more difficult questions. W. W. Charters, Harl R. Douglass, Peter Spencer, and other investigators have found that scores made on tests scored with the use of weights and scores made on the same tests by the same learners scored by counting all questions equally are almost perfectly correlated, the coefficients averaging close to 0.95, and almost invariably greater than 0.90.

8. MARKS AND MARKING SYSTEMS

Within recent years several important trends have been operative with respect to thinking and practice in marks and marking. In the first place, less importance is being attached to marks as a means of motivating learners. They are not so conspicuous in the life of the school. Secondly, final marks or measures of growth are based less exclusively on written tests than formerly, and more on other measures of growth: observations, ratings of performance, daily learner behavior, and the like. A third trend may be seen in the tendency to try to measure more completely learning outcomes other than the acquisition of information, e.g., understanding, mental and social skills, attitudes, ability to apply, and ideals.

The Passing of the Percentage System.—Within recent years the percentage system, or numerical system with a range of 100 points, has ceased to be the predominant marking system in American high schools. Even when the 100-point numerical plan is used in scoring objective test papers, the scores are usually transmuted into five or six categories and designated by as many letters of the alphabet. The latter is commonly referred to as the *literal* marking system.

The decrease in the popularity of the percentage marking system can be attributed to several fallacies in the assumptions which underlie the plan. In the first place, its use assumes that the discriminations which a teacher makes in evaluating a pupil's achievement are so fine and exact that a 100-point scale is needed to record these distinctions. With our present instruments of measurement, it is very doubtful that such fine discriminations can be made with any reasonable degree of accuracy. Even if it were possible to discriminate with such a fine degree of exactitude, it is usually unnecessary to do so.

Few schools ever actually use the entire 100 points on the percentile scale. If 70 per cent is the passing mark in the school, only the upper 31 to 40 per cent of the scale is actually used. Even that many points call for discriminations of too great exactitude. Confronted with the percentage systems in their schools, teachers attempt to make the fine distinctions which are demanded. Recently at the commencement exercises of a high school which still uses the percentage system of marking, it was publicly announced that the valedictorian had made in his four years of high school work an average of 94.6 per cent. The salutatorian made an average mark of 94.5 per cent, and a third student had an average of 94.3. The difference of 0.1 per cent won a college scholarship as well as great prestige for the valedictorian. How much longer will schools perpetrate such a hoax upon innocent children and the public?

In the event a teacher could determine with absolute accuracy that a test paper should receive a mark of 85 per cent, the mark would have no meaning unless the relative difficulty of the test could be clearly established. The divisions on a percentage scale represent percentages of "something." Do they represent percentages of perfection, or the teacher's knowledge of the course, or what? Until that question is answered, no one knows what a passing or failing mark on the percentage scale means.

The Literal System of Marking.—In an attempt to eliminate the necessity for making the impossibly fine discriminations required by the percentage system, many high schools have devised a five-point marking system. The interval between each two points is designated by a letter of the alphabet, usually A, B, C, D, or F. Many literal systems are merely modifications of the percentage system (for example, systems in which A equals 90 to 100 and B is the equivalent of 80 to 89, etc.). A more satisfactory procedure is to have A represent *superior* achievement, B represent *good* work, C stand for *average* achievement, D represent *poor* work, and F represent *failure.*

A clear understanding on the part of teachers of what the different letters represent will serve to decrease the variability of teachers' marks. A mark of *A* given by one teacher may be in respect to the quality and quantity of work the equivalent of a mark of *B* given by another teacher in the same school. An examination of the marks given by one teacher revealed that over a period of several years he had never given a student a mark of A, while another teacher had given a large number of A's and very few F's. It is hardly likely that any teacher over a period of years will not encounter at least a few very superior pupils.

Marking Systems Based upon the Normal Distribution Curve.—As deficiencies in the conventional marking systems have become more apparent owing to the application of scientific methods to school measurement, new systems of recording pupil achievement have been suggested. A system based upon the normal distribution or normal probability curve has been discussed widely, but adopted by a comparatively small number of schools.

The theory of probability is based upon the results of observations of the traits of large numbers of unselected human beings. These observations reveal that in the measurement of any trait the subjects are distributed by chance according to Figure 1.

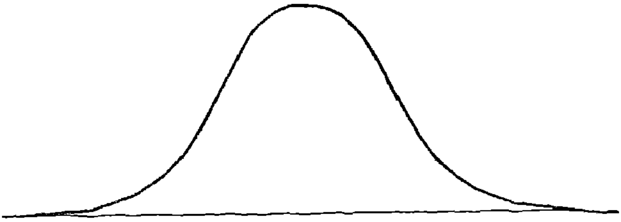

Figure 1. The Normal Probability Curve

It will be observed that a large number of cases cluster around the average and a steadily decreasing number are found as the extremes are approached. Since the results of accurate measures of the school achievement of unselected groups of children tend to be distributed according to the normal probability curve, it seems logical to make a comparable distribution of marks.

While no mathematical formula will indicate the *exact* number of pupils who should receive A, B, C, D, or F, the normal distribution curve provides a means of ascertaining the approximate expectancies for the occurrence of each mark. The expansion of the binomial $(a+b)^n$, in which one (1) less than the number of points on the marking scale is the exponent, will give the approximate occurrence of the marks in each category. For instance, in a five-point scale the formula is:

$$(a+b)^4 = \underset{\frac{1}{16}}{\underline{a^4}} + \underset{\frac{4}{16}}{\underline{4a^3b}} + \underset{\frac{6}{16}}{\underline{6a^2b^2}} + \underset{\frac{4}{16}}{\underline{4ab^3}} + \underset{\frac{1}{16}}{\underline{b^4}}$$

Changing the fractions to rounded-off percentages, they equal

Marks:	A	B	C	D	F
Percentage	6	25	38	25	6

Limitations in the Use of the Normal Curve.—The normal distribution curve is mathematically true only when applied to a large number of cases. Hence the distribution of the marks of a small class into exact percentages as suggested by the curve is subject to a large error. Similar divisions of the marks of large classes are likewise liable to serious error. The fact that classes deviate from the normal injects another biasing factor into the situation. Some classes may have a large number of superior students in them, whereas another class may have a disproportionate number of poor students. In regard to the amount of deviation, the teacher can verify his own judgment by the use of standardized achievement tests. However, as was suggested in Chapter 20, the validity of standardized achievement test scores should be verified in terms of the objectives of the course.

It is extremely important for the teacher to understand, in the use of the normal curve as a basis of marking, that it is not necessary to give the mark of failure to any student, certainly not to exactly 6 per cent of the class. Neither is it likely, using a five-point marking system, that exactly 6 per cent of the students, or for that matter any student, in a given class will receive a mark of A.

Allowances should and can be made for variations arising from small samplings of students. Various plans have been proposed which give a certain degree of latitude within each interval. For example, the distribution of marks might be as follows:

A	B	C	D	F
0 – 15%	20% – 30%	30% – 40%	20% – 30%	0 – 15%

Dangers in Excessive Flexibility.—While too strict adherence to the normal probability curve is undesirable in the allocation of marks, extreme flexibility should likewise be avoided. One of the chief values of this type of marking system is that it promotes greater uniformity in the distribution of marks among teachers within a school. Preconceived ideas cause some teachers to consider all pupils in their classes as inferior or as superior. This bias is often revealed in the assignment of a large number of either high or low marks by a teacher over a period of years. Accurate evaluation of the achievement of a large number of high school classes, having a total enrollment of several hundred students, will very closely approach a normal distribution of marks. In most high schools, intelligence tests scores of all the pupils are available. These scores provide a sound check on the teacher's judgment in regard to the extent to which a class deviates from the normal.

Another erroneous concept held by many teachers concerns the relative number of high marks which should be given to upperclassmen in comparison to those awarded freshmen. It is frequently argued that, since the factor of selection has been in operation, the poorer students have been eliminated before they become juniors or seniors and consequently upperclassmen should on the average receive higher marks. If the materials of instruction are properly graded on the basis of the capacities of students, the difference in the difficulty of the work at various grade levels will minimize the effect of the factor of selection. If school work is to challenge all students, it must require their best efforts at all grade levels. When this is done, differences in achievement will be as pronounced among seniors as among freshmen.

Advantages of Normal Distribution System.—Despite the difficulties involved in the proper use of this type of marking system, it possesses certain distinct values. These advantages may be summarized as follows:

1. It serves to prevent misunderstandings among the teachers in regard to marks.
2. The system affords a more satisfactory basis for an understanding of the meaning of school marks by pupils and their parents.
3. Since the subjective elements in marking are reduced, the marks have greater significance for guidance and other educational uses.

In interpreting a mark, it should be related to some standard as the basis of comparison. The normal distribution provides such a standard. A mark reveals the pupil's achievement in relation to that of normal achievement of a typical class in the subject. Pupils and parents understand the meaning of a mark more readily when it is explained in terms of the achievement of the other members of the class.

Effective use of the system serves to minimize the opportunity of the teacher who wishes to establish a reputation for high standards by giving an unreasonable number of low marks. Likewise restrained is the teacher who appears oblivious of accepted standards to the extent of giving unearned high marks to students in order to win their approval. The pupils and schools deserve to be protected from teachers such as these.

9. REPORTS TO PARENTS

Reactions Against Report Cards.—Perhaps no single thing that teachers do is more effective in bringing about misunderstanding between parents and teachers, parents and their children, and teachers and their pupils than the sending to parents of what purport to be measures of the student's progress in his school work. Parents find it difficult to feel friendly to or enthusiastic about a school which reports their beloved youngsters as lacking intelligence, interest, industry, or a combination of these, which is exactly what a low report card mark means.

Parents scold their children, withdraw privileges, sometimes punish them, criticize the teacher before the child, furnish alibis and rationalizations for him, or otherwise behave in a way not conducive to good relationship in the triangle of parent, child, and teacher and to good growth on the part of the youngster.

Report cards have also been deservedly criticized for some time and increasingly in later years as not being accurate measures of pupil growth. It has been claimed that they do not measure general development and ignore very important areas of growth, e.g., various characteristics of character and personality and social behavior. It has also been pointed out that the marks do not measure progress. The marks are usually in terms of relative status of the pupils and do not furnish measures of student growth. Another weakness apparently lies in the fact that the marks are not in terms of absolute achievement. Hence, since teachers vary so much in standards, the marks are misleading and not understood by parents. Still another objection is that teachers tend—some more, some less—to allow good or bad behavior, personal likes and dislikes, appearance, "apple-polishing," and other extraneous influences to affect the marks.

Newer Trends in Practice.—In recent years, the practice has developed of sending home progress reports not only on school subjects but on qualities of citizenship, etc., as indicated by entries on the report card blanks shown on the next two pages.

It is very difficult to measure growth with respect to qualities of citizenship, personality, and the like. The teacher ordinarily has insufficient basis of observation for judgment, and the ratings are, therefore, little more than guesses. Usually they are general impressions based on what is a very unreliable sample of the child's behavior. Perhaps the chief advantage of the use of this kind of report is to cause parents to be less concerned with school subject marks.

Another and a more promising trend in practice is to send home from time to time a non-technical report—merely an informal statement in regard to the progress of the learner, usually some praise and often some suggestions for improvement of his school work, personality, or character. In some schools these are sent to all parents at regular intervals. In others they are sent as there seems to be occasion or need. In some schools reports are made largely by home visits and telephone calls

Student's Objective Progress Report

General Science

Pupil .... *Teacher* ....

Division .... *Date* ....

1st Period 2nd Period 3rd Period 4th Period

Key: 5 Outstanding Ability

4 Good 2 Below Average

3 Average 1 Failure

Periods

	1	2	3	4
Attendance (for home room only):				
Days absent				
Times tardy				
Times truant				
General Quality of Work:				
Able to apply knowledge to new problems.				
Occupies time to best advantage				
Good work habits				
Accurate				
Attitude:				
Shows desire for improvement...........				
Attentive				
Courteous				
Shows interest				
Self-reliant				
Follows directions promptly and cheerfully				
Tries again and again				
Dependability:				
Punctual in work and appointments......				
Constructive in ideas				
Dependable without watching............				

Remarks ....

....

Parent's Signature 1st Period Parent's Signature 2nd Period

....

Parent's Signature 3rd Period

Quoted by permission from Edwin C. Traxler, *Techniques of Guidance*, New York: Harper & Bros., p. 258.

STUDENT'S OBJECTIVE PROGRESS REPORT

Pupil .... *Year* ....

Subject: ENGLISH, Grade VII.

	Periods 1	2	3	4
1. A check here indicates work is satisfactory in all respects and requires no detailed report.				
2. A check here indicates work is NOT satisfactory.				

5—Superior
4—Above Average
3—Average
2—Lowest Acceptable Work
1—Failure
Inc.—Incomplete

I. Scholarship and Class Work:				
Quality of work in English.............				
Knowledge of necessary fundamental principles				
Understanding of new subject matter...				
Neatness and correctness in written work (spelling, punctuation, sentence structure)				
Clearness in presentation of oral work...				
Notebook work				
II. Good Citizenship Traits:				
Study habits				
Initiative in finding new tasks when those assigned have been finished...........				
Carefulness in following directions.....				
Behavior and good manners...........				
Attendance: Days absent				
Times tardy				

....

Parent's Signature 1st Period **Parent's Signature 2nd Period**

....

Parent's Signature 3rd Period

....

Teacher

Quoted by permission from Edwin C. Traxler, *Techniques of Guidance*, New York: Harper & Bros., p. 256.

This type of new practice is relatively free from the worst evils of the formal report card and has much to recommend it. The greatest obstacle to its rapid spread in use are (1) parents' conservatism and unwarranted faith in the old-fashioned report card and (2) opposition of inferior teachers who fear they cannot motivate their learners without "telling the parents on the pupils," and those who wish to punish lazy or uninterested pupils by giving them poor marks. It should be understood that the most intelligent use of this type of reporting does not in the slightest diminish the need for careful, accurate testing of growth and status and the regular recording of marks for diagnosis, guidance, and other purposes.

Questions, Problems, and Exercises

1. Evaluate the means used in measuring and reporting pupil progress in the high school from which you graduated.
2. What are the principal sources of inaccuracy in measurement and marking?
3. State at least one purpose for measurement other than the four mentioned in the book.
4. Select some one high school subject and indicate to what extent and in what way you would use daily class marks in teaching it.
5. In teaching your subject, when would you use oral examinations or quizzes? When would you use written examinations?
6. In teaching your subject, when would you use announced quizzes? unannounced quizzes?
7. Write out an anecdotal record based upon facts in your high school life. Of what use, if any, could it be in measuring and evaluating your own high school progress?
8. Be able to state and explain the five or six important criteria for evaluating a test.
9. How can you measure the validity of a test? How is validity relative to objectives?
10. What factors contribute to the lack of reliability in a test? of objectivity? of both?
11. Of what value are test norms to a teacher? What are some dangers in the use of norms?
12. Compare enumeration, essay, true-false, completion, and multiple-choice tests as to validity, reliability, and objectivity; as to ease of construction and of scoring.
13. Construct a test for your high school subject containing:
    (a) True-false items—ten minutes
    (b) Multiple-choice items—ten minutes
    (c) Enumeration items—fifteen minutes

(d) Completion items—five minutes
(e) Essay items—thirty minutes

Which do you think would give you a better measure of student progress, (a), (b), and (c)—35 minutes or (d) and (e)—35 minutes?

14. What kinds of measurements would you use to determine growth in your high school subject and what relative importance would you attach to each? (Include class recitations, daily work, written work, tests, etc.)
15. How would you measure habits and skills?
16. How would you measure ideals and attitudes?
17. How would you measure interests and tastes?
18. How can essay tests be best improved?
19. Be able to give a ten-minute talk in class on scoring objective examinations.
20. What do you think of the relative merits and disadvantages of (a) the percentage marking system, (b) use of the letters A, B, C, D and E, (c) the use of *Honor*, *Pass*, and *Fail*?
21. Describe how you believe the normal curve system of marking should be used if at all. Do you believe in using it? Why or why not?
22. Assign to the following tests scores the marks A, B, etc.: 68, 67, 60, 51, 43, 42, 42, 41, 41, 40, 40, 40, 38, 37, 37, 36, 36, 35, 34, 34, 29, 27.
23. Do you believe in sending home report cards? What kind of reports? Give reasons.
24. Obtain one or more blanks for reports to parents and evaluate them.
25. Examine the General Educational Development Tests and suggest how you might be able to use them.

Chapter 22

THE TEACHER AND GUIDANCE

1. Responsibilities and Opportunities

One of the characteristics of teaching today as compared to that of a decade or so ago is the greater definite responsibility of the teacher for service as a counselor of youth. In earlier treatises on high school teaching, whatever discussion of guidance was included was quite incidental. The basic viewpoint from which such books were written and upon which courses in teaching were based was that instruction in the school subject was the work of the teacher.

Today, in almost all schools, the services of the teacher to young people include various types of activities having for their objective assistance to boys and girls in solving various problems of life which are seldom dealt with in their school subjects. The modern viewpoint is frequently referred to as the "child-centered" approach or teaching the "whole child." As indicated in Chapter 2, the responsibility of the teacher is to stimulate, direct, and accelerate the growth of the child toward recognized objectives. While very great contributions may be made through the medium of instruction in the school subjects, there are very important pupil needs and needs of growth which are not adequately involved. Every boy and every girl needs assistance and guidance in solving numerous other important problems and in making very important decisions.

Increased Responsibilities.—In the typical modern school today, teachers serve as boys' advisers, girls' advisers (dean of girls), class counselors, and home room sponsors and in other guidance capacities, usually as a part of their teaching responsibilities, sometimes on full time. In all schools, teachers have opportunities to render valuable guidance service in relation to the teaching of their school subjects. The writer of this chapter remembers often and with great appreciation the "guidance" of a Latin teacher who went beyond the ordinary demands of duty to assist him in realizing the importance of a number of problems, in giving a vision of possibilities barely thought of previously, in inspiring a thoughtless boy to prepare himself for a much richer and more useful life, in avoiding very unwise decisions on important problems, and in improving himself in ways not related to the subjects taught by the instructor.

How to Determine Extent of Responsibility.—The degree to which a teacher should assume responsibilities for guidance and the nature of his services are dependent upon a number of factors, among which the following are prominent:

1. The degree to which his experience gives him background for special competence in the various areas in which guidance is necessary
2. The amount and nature of his training for services calling for specialized training
3. The degree to which he is adapted by personality and temperament for leadership and personal influence with young people

To see many applications of these three criteria is not difficult. Not all teachers can render reliable and useful assistance in considering the choice of a vocation, deciding what college to attend, making satisfactory adjustments to real or imaginary injustice or unwise treatment or management by a parent, carrying the burden of being handicapped in appearance or social attractiveness, solving vexatious or dangerous boy-girl problems, and learning to curb mischievous tendencies or inclinations to feel abused out of proportion to cause.

The teacher should, therefore, be just as alert and ready to avoid attempting a service which he is not prepared to give as he is to seek opportunities to render a guidance service which he can give effectively. He should always adapt his activities to the competence he brings to the problem. For some of the problems mentioned in the previous paragraph specialized knowledge and skill is required, e.g., in guiding a youngster in making a vocational choice. In others, experience of appropriate type is needed; in others, an unusual degree of maturity; in others, a very favorable personality for leadership.

Training and Experience.—To prepare for a high degree of competence in guidance service with high school youth, the teacher should have training in a considerable number of the following fields:

1. Mental hygiene
2. Intelligence tests and their interpretation
3. Measurement of special aptitude and interests
4. Statistical methods

5. Vocational guidance
6. Family life and problems
7. Psychology and measurement of personality
8. Educational measurements
9. Adolescent and social psychology
10. Economics and sociology, especially the economic and social forces which influence adolescent behavior

In addition to knowledge acquired from courses and books, the teacher who would be a good counselor needs to accumulate appropriate life experiences and contacts, including the following types:

1. Associating with young people in their play and social activities
2. Associating with parents and entering homes of young people
3. Associating with youth agencies (Y.M.C.A. and Y.W.C.A., Boy Scouts, Camp-fire Girls, etc.)
4. Contact with religious agencies and activities
5. Contact with social agencies and officers dealing with juvenile delinquencies (welfare agencies, Red Cross, juvenile courts and officers, etc.)
6. Discussion with parents of youth problems (individually in P.T.A. or other organizations)
7. Contact with employers and with employment agencies
8. Observation of conditions of work in various vocations
9. First-hand work experience outside the schoolroom
10. Broad and penetrating knowledge of the general social scene

Too many teachers have led and ordinarily continue to lead an artificial life—one of words and books, high ideals and schoolroom abstractions. Their activities in school and out are lacking in experiences with the very problems which are most important in many of the more essential areas of guidance service. They usually do not deal with matters of vocation, dating and courting, religious complexes, domestic problems, social life in places of commercial amusement, and the like. What personal experiences they have had are in many cases limited in scope, somewhat outdated, and viewed from the wrong side of the counter. The teacher who would be a superior counselor must consciously broaden his acquaintance with out-of-school life and activities. This he may do best by a combination of broad reading and of personal experiences. Teachers who wish to become good counselors without attending formal college classes should read several of the following books:

1. Bell, Hugh M. *The Theory and Practice of Personal Counseling.* Stanford University, Calif.: Stanford University Press, 1939, 167 pp.

2. Dunsmoor, Clarence C., and Miller, Leonard M. *Guidance Methods for Teachers.* Scranton, Pa.: International Textbook Co., 382 pp.
3. Erickson, Clifford E., and Happ, Marion Crossley. *Guidance Practices at Work.* New York: McGraw-Hill Book Co., Inc., 1946, 323 pp.
4. Germane, Charles E. and Edith G. *Personnel Work in High School: A Program for The Guidance of Youth—Educational, Social and Vocational.* New York: Silver Burdett Co., 1941, 600 pp.
5. Hamrin, Shirley A., and Erickson, Clifford E. *Guidance in the Secondary School.* New York: D. Appleton-Century Co., Inc., 1939, 465 pp.
6. Jones, Arthur J. *Principles of Guidance* (2nd ed.). New York: McGraw-Hill Book Co., Inc., 1934, 456 pp.
7. Lefever, D. Welty, and others. *Principles and Techniques of Guidance.* New York: The Ronald Press Co., 1941, 522 pp.
8. Myers, George E. *Principles and Techniques of Vocational Guidance.* New York: McGraw-Hill Book Co., Inc., 1941, 377 pp.
9. Reed, Anna Y. *Guidance and Personnel Services in Education.* Ithaca, N. Y.: Cornell University Press, 1944, 496 pp.
10. Strang, Ruth. *Pupil Personnel and Guidance.* New York: The Macmillan Co., 1940, 356 pp.

Areas of Guidance.—Although the types of guidance service are not always distinguishable inasmuch as each particular case usually involves two or more types of service, for the purposes of discussion it is useful to think of them as falling into categories similar to the following:

1. Educational guidance
2. Vocational guidance
3. Social and moral guidance
4. Health guidance
5. Recreational and leisure guidance
6. Personality guidance, including problems of mental hygiene
7. Miscellaneous problems relating to finance, religion, superstitions

Many people are prone to think of guidance as no broader than educational and vocational guidance, and some as no broader than vocational guidance. A much more correct view is that guidance is as broad as the areas involved in all the problems which confront people. In many cases, the individual is beset at one time with problems from several areas—problems which are interrelated, contributing one to another, or contributing jointly to a condition from which the individual needs relief. The following quotation is indicative of the broad and varied scope of guidance problems and services:

Out of the thousands of conferences similar to those today have come questions covering the whole range of educational, vocational, and personal problems that perplex adolescents. Here are some samples: How can I get any social development when my parents won't even let me walk home from church with a boy? How could I get work in a cow-testing association? How much does a year at college cost? How can I stop my mother from running around with men? Should I take my father's offer to set me up in the hardware business?

Since high school is so hard for me is it worth while to try to get through college? Is there any chance for a woman in electro-therapy? Should a boy who is late in reaching adolescence go to college at sixteen or seventeen? How do you get into the Government Forest Service? How can I study science and still believe in the Bible? Doesn't it take more courage to commit suicide than to live? Does it cost less to go to a small college than to a large one? If sex is a normal thing why don't people act like it was?

Are correspondence courses in electricity any good? Can business college training be transferred toward a regular college degree? Should a Protestant girl enter a Catholic hospital for nurse's training? How can I learn to concentrate? Are there any tests that will tell me what I am fitted for? Should I take up medicine just because my folks want me to? Should I go to a large college or to a small one?

Since my mother is insane, do I dare to marry and have children? How is the best way to learn to be a chef? After I finish high school should I stay out a year and work or go on to college right away? Will bookkeeping machines crowd out regular bookkeepers? Does a professional boxer make anything if he is just an ordinary "palooka"? What things in life are most worth while? [1]

2. BASIC ASSUMPTIONS AND PHILOSOPHIES

Guidance as a Cooperative Undertaking.—In the earlier days of the guidance movement, there was an unfortunate tendency to think of guidance as definite advisement or direction of other human beings—as diagnosing conditions and prescribing for the counselee much as in the case of physician and patient. This concept of guidance was a glamorous one—dangerously attractive because of the feeling of power and superiority it afforded the counselor. To be sure, there are some situations in which that sort of procedure is appropriate. In general, however, a different approach is not only desirable, but is quite necessary if counseling is not to become medicine-man stuff or quackery.

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[1] L. L. Love, "The Sea of Adolescent Storms," *School and Society,* XXXIX, 763-773.

In the very large majority of cases, guidance must be more of the nature of guiding the counselee to make his own decisions, helping him see his own problems, helping him find out what he needs to know to solve them, and helping him use that information about himself or otherwise in arriving at a solution, temporary or permanent. This is true because (1) the value of the solution is in most cases dependent upon the degree to which it is his own and the degree of confidence he has in it, (2) the more permanent value of guidance is dependent upon the training the counselor has had in meeting similar situations independently in the past, and (3) the continuing nature of many problems makes only a partial solution possible at the time, hence the necessity of an experimental approach and attitude.

Problems Tend to Be Recurrent or Continuous.—Quite often the problem is one that cannot be solved once for all, e.g.: what vocation shall I follow, how can I be more attractive, how can I be more healthy, or what shall be my educational career? Most often the problem is a continuous or a recurrent one. The counselee needs training in how to meet it, how to study it, how to go about arriving at a better type of solution. He cannot and should not always be passing the problem to a counselor. The objective is to train him to solve his own problems.

Definite Solutions Often Impossible.—Quite often the problem is not one for which there is an exact, unequivocal answer. More often than not, the best solution that can be arrived at by counselor and counselee is one in terms of probabilities. For example, by the use of tests and other data, approximate predictions of the probable success of a youth in the study of law may be made. Occasionally an individual for whom the prognosis is most favorable will not succeed or vice versa. With respect to other problems, it is a matter of trial and error—the value of the guidance consisting largely in collecting for trial those possible solutions most likely to prove successful.

Altogether too frequently the problem is one for which there is no very complete solution other than learning to bear with the unfortunate conditions. There are many problems in the lives of young people which counselors cannot help them solve: sometimes because of the nature of the problem, sometimes because of the limitations of the counselor, sometimes because our prevailing customs and mores do not permit the counselor, particularly if he is a teacher, to suggest the best solution or the counselee to employ it.

This is particularly true with respect to sex problems or religious problems—two of the most serious types.

Guidance and Misbehavior.—Guidance should not be too closely associated with the objective of discipline and order in the school. As indicated in Chapter 6, modern approaches to the problems of misbehavior of individuals are tending more and more to utilize the techniques of individual diagnosis and individual guidance. In some schools the guidance program centers unwisely around the problems of pupil morale and order.

Without question, however, the teacher may utilize occasions of misbehavior as the starting point to learn more about the pupil and to identify his problems and the specific locus or loci of his maladjustment. At first the offender may seek to excuse his offenses. In such situations his testimony must be appropriately discounted. In the hands of a skillful interviewer, however, this factor will tend to disappear as the student becomes convinced that the counselor is attempting to be of practical assistance to him and not to lecture him, to moralize, or to spy on him.

The counselor should avoid giving the counselee the feeling that he is regarded as a problem child. Usually when the counselee becomes convinced that he is, the effect is to discourage him or to cause him to try to justify his being a problem child and to try to lay the blame elsewhere. Often he convinces himself that he has been mismanaged. If he is not convinced that he has been managed properly, he is likely either to resent the misjudgment of him or to lose confidence in his counselor—sometimes both.

Discussions of counselees by teachers should be carried on sparingly and always in a spirit of helpfulness and at a professional level. They should never be considered merely as interesting gossip, so commonly participated in by teachers. Be careful not to come to any conclusions based upon comments by other teachers. Such comments are extremely likely to be undependable, warped, and partial.

Rarely if ever, should a teacher or other counselor reveal a confidence placed in him by a boy or girl, regardless of the nature of the confidence. To do so is not only unprofessional and unethical in teaching, as in medicine, but will serve to insulate the counselee from that particular teacher if not from all teachers as counselors.

It is one of the most important principles of guidance that guidance service is sound and effective—and therefore wise and ethical —only when the counselor bases his judgments, procedures, or counsel on adequate information about the counselee. Some discussion of pupil data was given in Chapter 19, "Adapting Instruction to the Individual," and additional points will be made in another section of this chapter.

Principles of Classroom Counseling Practice.—Limitations of space and the purposes of this volume do not call for or permit a treatment of the specific practices of counseling. The teacher who is to achieve anything but superficial success in this important area of service should take at least two or three courses or read a half-dozen good books on guidance and such related fields as interpretation of measurements, mental hygiene, and statistical methods.

Following are some of the more important practical suggestions for teacher-counselors in meeting typical classroom problem cases:

1. The best attitude is one of cheerful, thoughtful objectivity, avoiding pronounced sympathizing, condemnation, or an air of easy optimism or slap-'em-on-the-back.
2. Remember the whole child. While you work for one character objective, take care lest you get undesirable by-products in other character objectives.
3. The child with extreme withdrawing, recessive characteristics is as much a problem in need of individual help as is the child with extreme aggressive characteristics. Too great shyness may mean more potential trouble than too great forwardness.
4. Utilize all readily accessible data, such as those relating to health, school progress, and home conditions. Cumulative pupil records already available in most schools furnish a large amount of valuable information.
5. Avoid treating symptoms. Try to find out why the child acts as he does, and then fit the treatment to the cause of the difficulty.
6. In some cases, the counselee should be kept informed of the purpose of the counselor, and should be appealed to consciously to aid in solving the problem. In other cases the counselee may be kept in partial or complete ignorance of the changes desired in him. The counselor should use whichever plan seems appropriate in any particular case.
7. Single experiences do not afford ground for generalization. Vivid incidents are particularly to be distrusted. Habitual and recurring behavior is the significant source of data.
8. Do not offer authoritative explanations. By the use of other cases and of questions, build up in the counselee his own reasonable interpretation of his behavior.
9. Expect patterns. Among the more common are dependence, fear of the new, avoidance of people, breakdowns, running away from a situation, projecting the blame onto an individual of a given type, and displacement, making a mountain out of a given molehill.

10. Do not give advice. Give the experience of yourself and others so far as it is useful, taking particular care to emphasize the differences in the situation faced by the counselee. No two persons have faced exactly the same situation. What the counselee needs is ability to handle situations himself, not advice to follow.
11. Emphasize success rather than failure. Seek to arrange situations which will give the child a taste of success.
12. To study other persons than the one immediately involved is sometimes necessary. A problem child means at least one and probably two problem parents.
13. It is seldom possible to depend exclusively upon the readjustment of the persons and objects in the environment, or upon the new insight and attitude of the persons and objects in the environment, or upon the new insight and attitude of the person being advised. All are usually in need of some readjustment.
14. Keep confidences inviolate.
15. Avoid letting the plans focus on too distant goals without adequate attention to immediate steps. Help the counselee to plan on improving adjustment this week, not to console himself with phantasy. The past and future exist to enrich the present.
16. Learn to identify early the cases which require a specialist, and be willing to refer them to him.[2]

3. EDUCATIONAL GUIDANCE

Types of Educational Guidance.—Educational guidance activities may be said to fall principally in the following categories:

1. Exploration of pupils' potential interests and abilities
2. Adaptation of class work to abilities, interests, and opportunity of the individual learner
3. Individual diagnosis and remedial learning activities
4. Training in methods of study
5. Guidance in the use of the library, laboratory, and shop
6. Orientation with respect to the conventions and rules of the school in the halls, in the auditorium, in the cafeteria, on the playground, in the classroom, and in matters of attendance and tardiness
7. Orientation with respect to the educational opportunity of the school—curricula, courses, extracurricular activities and organizations
8. Help in planning or learning how to plan an educational career; choice of subjects at registration and preregistration times

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[2] A. L. Threlkeld, chairman of the commission, *Character Education, Tenth Yearbook* of the Department of Superintendence of the National Education Association, pp. 251-252.

9. Assistance in deciding whether to go to college, what college to attend, what curriculum to follow, how to succeed in college subjects, how to get the most out of college, etc.
10. Assistance in interpreting the values of formal education
11. Assistance in making applications of school learning to out-of-school situations

Some of these guidance services can be rendered just before the student enters the new junior or senior high school, some at the time he enters or early thereafter, some all along the route, and some just before he leaves school.

Devices for Educational Guidance.—Various means are employed for rendering these services, including handbooks, instruction sheets, assembly talks by pupils and teacher, the big-sister plan, home room discussions and programs, preregistration, inclusion in and adaptation of regular class work, individual and group conferences in supervised study portions of class periods or after school, and the use of tests and supplemental assignments.

Those services and devices most closely associated with teaching, for example, numbers 1, 2, 3, 4, and 5 in the above list, are discussed in Chapter 19, "Adapting Instruction to the Individual," and Chapter 9, "Teaching Pupils How to Study." Other types mentioned in the list partake more largely of the nature of guidance than of teaching. Teachers who wish to be successful in using these types of guidance should read at least two or three of the books on guidance listed earlier in this chapter.

Orientation of New Students.—Many a youngster spends a year or more in a school before acquiring an adequate knowledge and understanding of his responsibilities and his opportunities in the school, just as many teachers are in a school a similar period before becoming really familiar with all of the more important details of its operation. From his disorientation and confusion arise many of his problems. Lack of orientation may be found to be the reason for some part at least of his failure to respond to and profit from his educational environment.

These facts were recognized by some schools years ago. In an increasing number of schools provisions are being made for appropriate educational guidance and orientation. Hand books are prepared, sometimes with the help of students, published, and discussed in home rooms, assemblies, classrooms, or a combination of these. In many schools first-year students are given in home rooms or elsewhere a series of lessons in orientation such as the following:

Lesson I. The school day, building orientation, and more important rules: information about the opening time of school, the length of periods, the schedule bells, assemblies, and lunch period; explanation of the roster card; plan of building; the numbering and the location of rooms; lunch rules; excuses for absence and tardiness; books and material for classes

Lesson II. Traffic regulations: need for them; standards and ideals, rules

Lesson III. Student material, equipment, lesson book: specifications for equipment to be supplied by student; how kept; other equipment for all classes; care and arrangement of books and material

Lesson IV. Personal appearance: cleanliness; neatness; clothes; conventions; posture

Lesson V. Lunchroom manners: standards and ideals; regulations; after lunch

Lesson VI. Group meetings, parliamentary procedure; order of business and parliamentary form; the school bank

Lesson VII. Aims, purposes, and functions of the junior high school; the curriculum and its special aims and functions

Lesson VIII. Home study; proper environment; rules for effective study

Lesson IX. Attendance, meaning and importance; proper excuses; details of routine

Lesson X. Punctuality, importance in business world; school punctuality

Lesson XI. Student organizations; school government; student agencies for government and activities and duty

Lesson XII. Ethics of the auditorium; advantages of auditorium privileges; means of entrance, seats, exits; behavior[3]

One of the important responsibilities of the teacher is to familiarize himself fully with all these matters, preferably with most of them before school begins. He should also study the pupil orientation program of the school and think through: (1) how he may most effectively cooperate in it and (2) what he should do to supplement it in his own classes, his home room, and his other guidance activities. The new teacher should obtain from the principal of the school as many of the following items as are available: handbooks, courses of study, report and record forms, lists of instructions and rules for staff and for students. In addition, he should seek information from teachers previously in the system, from the principal, and from the head clerk in the principal's office.

Certain subjects lend themselves better than others to use in educational guidance. In English classes, for example, oral discussions, written papers, debates and panel discussions, and reports on assigned readings for abstracting and reporting may be utilized to stimulate students to learn and to think about nearly all of the matters mentioned on page 483. Some of them may well be the subject of discussion in classes in civics and government. Students may utilize them to speak in assemblies, in home rooms other than than their own, and in schools from which incoming new pupils are expected, to prepare hand books, and to plan orientation activities.

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[3] Harl R. Douglass, *Organization and Administration of Secondary Schools,* Boston: Ginn & Co., pp. 173-174.

Assisting Pupils to Choose Subjects.—To an increasing degree in recent years, high school teachers have engaged in certain types of guidance activities that are of very doubtful value if not actually misleading and harmful. Either because they are ignorant or misinformed or because they are overzealous with respect to the subjects they teach, many instructors in the guise of guidance exploit young people by giving them misinformation about the values of their favorite studies—spinning great yarns about their disciplinary values and their values as preparation for college, about what the study of Latin has done for them and what great men have said about the study of algebra.

In the light of the conclusions of scientific investigators that there is no appreciable difference in the value of most subjects for the purposes of developing the general mental powers or for preparation for college,[4] the efforts of teachers to "sell" the value of studying their subjects of specialization are little short of unethical. Much of the advice of teachers about college, preparation for college, and preparation for vocation is of the same low caliber. The information about such matters possessed by most teachers is limited, and their advice, consciously or unconsciously colored by allegiance to his *alma mater.* This is probably the principal reason why older pupils are so much inclined to take lightly the advice of teachers and the information they purport to give. The wise teacher takes a leaf from the practice of the better physician in holding his peace except when he knows whereof he speaks.

4. VOCATIONAL AND OTHER TYPES OF GUIDANCE

Study of Occupation and Vocational Choice.—There are many aspects of vocational guidance which should not be attempted by the teacher without appropriate training, e.g., attempting to tell pupils how to select a vocation or for what vocation they are best fitted. There are, however, many contributions which the classroom teacher may make. In the teaching of almost every subject, there are opportunities to call the attention of pupils to facts which have some bearing on the matter of vocations, their requirements, their activities, their rewards, etc. There is also opportunity for pupils to explore their interests, capacities, and abilities in connection with activities which are integral parts of certain vocations.

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[4] See E. L. Thorndike, "Mental Discipline in the High School Studies," *Journal of Educational Psychology*, XV, 1-22 and 83-98; Harl R. Douglass, "Secondary School Problems and the College," *California Journal of Secondary Education*, XIV, 301-306.

Teachers should be cautious in suggesting an occupation as most suitable for a given youngster. Those who have given little study to such matters are very likely to give bad advice. Many teachers, for example, make the mistake of advising boys who exhibit interest and ability in public speaking to plan to enter the practice of law. Investigations and the experience of lawyers do not seem to reveal any considerable relationship between public speaking ability and success in the study of law, particularly in the case of individuals not of distinctly superior general mental ability. Likewise, of boys whose interests lie along mechanical lines only a very small minority can hope to become engineers.

As the result of so large a percentage of young people attending high schools in recent decades, a far larger proportion, indeed a large majority of high school boys, will enter white-collar occupations; teachers, therefore, should not contribute to the prevailing, though receding idea that all high school youth should aspire to white-collar jobs. Teachers should also realize that law, medicine, dentistry, engineering, and other professions constitute only a very small percentage of the more than 20,000 occupational classifications into which young people go today.

Guidance for Leisure Activities.—With the greatly increased amount of time available for leisure for both young and old and the doubtful character of much of the commercialized amusement of today, the opportunities and responsibilities for guidance in connection with leisure have increased challengingly. Not only should teachers so teach their subjects as to develop leisure tastes, but leisure practices should be developed in high school. Hobbies and leisure clubs have found a deserved place of prominence in the modern high school, and naturally the great part of the necessary leadership must come from teachers.

From the contacts of teacher with pupil in class instruction, and in various extracurricular activities, relationships develop which provide opportunities for teachers to learn of the problems which confront their students. On many of these, young people can use help from teachers to great advantage; and the quality of service of teachers is somewhat in proportion to the extent to which boys and girls confide in them and rely upon them in time of need, and in proportion to the quality of assistance they are equipped to render.

Other Areas.—As indicated in Section 2 of this chapter, the types of student problems are legion in the fields of health, social life, home life, appearance and personal attractiveness, place in life, studies, conflicts with other human beings, lack of talents, religious complexes, and many others. Fortunate is the pupil who has at least one teacher to whom he can go with confidence of an understanding audience and with reasonable certainty that he will not receive too much well-meant but questionable advice.

5. PUPIL DATA

The data needed for counseling include all the types mentioned in Chapter 19 and additional data in proportion to the ability of the counselor to interpret them soundly. A brief summary of the types of data useful in the hands of a properly trained counselor is given in the following paragraphs.

Capacities and Aptitudes.—This classification includes scholastic marks made in previous years in school in various subjects, aptitude tests, rankings in such fields as mathematics, foreign languages, mechanical ability, music, and art.

Interests.—The counselor needs to know from previous participation in hobbies, extracurricular activities, home and other out-of-school occupations, and interest inventories what types of activities are of most and of least interest to the counselee.

Character Traits.—The counselor should attempt to learn the nature of important character traits of his young friends, usually from ratings by teachers, fellow pupils, and parents and from anecdotal records. Among the traits of more pertinence are dependability, leadership, cooperativeness, emotional stability, initiative, self-centeredness, and honesty. Data of this sort must be interpreted most carefully with the realization that the rater may not have had sufficient basis for accurate rating and that an individual may be cooperative, dependable, and honest, or show initiative or leadership, in one type of situation and not in another.

Home Environment.—The counselor should have from many sources a body of knowledge of the home conditions and surroundings: economic status, cultural level, spiritual morale, type of relationship with parents, opportunities and faculties for study, type of neighborhood, religious attitude, etc. Those data may come from routine records and conferences with counselees, but in large part they can be obtained only by visiting the home and making contact with the parents. Care must be taken not to seem to pry too aggressively into the private life of the counselee, and one must realize that judgments relative to such matters may often be quite unrelated.

Out-of-School Experience.—For the light it throws upon many questions, the services of the counselor may be much improved by knowledge of what occupational, social, religious, hobby, and play experiences the counselee has had. This type of data is relatively easy to obtain by conference or by means of a blank especially prepared for the purpose. Data of this sort may quite often be made the subject of discussion with the counselee to discover interests, the causes of conflicts, aptitudes, character traits, and other valuable information.

Health Records.—Aside from health guidance, records of unusual handicaps resulting from illness, physical weakness of any sort, or physical defects such as defective vision, hearing, heart, nutrition, or glandular operation are of significance not only in connection with the adaptation of the educational program, but in diagnosis of personality disorders or untoward, unhealthy behavior.

Means and Devices for Collecting Data.—It would transcend the scope of this volume to attempt to set forth the techniques, forms, and procedures for gathering and interpreting the data so necessary for effective counseling. The teacher who would become proficient in the gathering and employment of other than the more simple and conventional types should take such courses as the following: mental testing, measurement of aptitudes and interests, measurement of personality, techniques of counseling, mental hygiene, elementary statistical methods, and measurement of school achievement. Both in courses and in professional reading for self-improvement, books and articles like the following are of value in learning about the collection and interpretation of individual pupil data:

1. Boyer, Philip A. "Use of Cumulative Records in High School." *Handbook of Cumulative Records*, Bulletin 1944, No. 5. Washington: U. S. Office of Education.

2. Darley, J. G. *Testing and Counseling in the High School Guidance Program.* Chicago: Science Research Associates, 1943, 224 pp.
3. Fenton, Norman. *The Counselor's Approach to the Home.* School Case Work Manuals, No. 1. Stanford University, Calif.: Stanford University Press, 1943, 32 pp.
4. Leonard, E. A., and Trucker, A. C. *The Individual Inventory in Guidance Programs in Secondary Schools.* Vocational Division Bulletin No. 215, Occupational Information and Guidance Series No. 7. Washington: U. S. Office of Education.
5. Ruch, G. M., and Segel, David. *Minimum Essentials of the Individual Inventory in Guidance.* Vocational Division Bulletin No. 202. Washington: U. S. Office of Education, 1939, 83 pp.
6. Smith, Eugene R. "Modernizing Records for Guidance and Transfer." *The Educational Record,* XXI, Supplement No. 13 (January, 1940), 17-33.
7. Strang, Ruth. *Behavior and Background of Students in College and Secondary School.* New York: Harper & Bros., 1937, 515 pp.
8. Symonds, Percival M. *Tests and Interest Questionnaires in the Guidance of High School Boys.* New York: Teachers College, Columbia University, 1930, 62 pp.
9. Symonds, Percival M., and Jackson, Claude. *Measurement of the Personality Adjustments of High School Pupils.* New York: Teachers College, Columbia University, 1935 (pamphlet).
10. Traxler, Arthur E. "Case-Study Procedures in Guidance." *School Review,* XLVI (October, 1938), 602-610.
11. Traxler, Edwin C. *Techniques of Guidance.* New York: Harper & Bros., 1945, 385 pp.

6. Guidance in the Classroom

Guidance Role of the Teacher.—In preceding sections of this chapter, participation by the teacher in the total guidance program of the school has been emphasized. As a cooperating member of the guidance staff the objectives of the teacher may be summarized as follows: (1) to obtain information in regard to each pupil in his classes which is pertinent for guidance purposes; (2) to make accurate records of each pupil's achievement, in order that counselors in the school may have reliable measures of each child's abilities in each subject; (3) to cooperate with other guidance personnel by providing them with needed information about pupils in his classes; (4) to serve on guidance committees; and (5) to act as home room teacher.

In addition to the foregoing list of guidance duties, the classroom teacher has the opportunity and the obligation to engage in the guidance of pupils in his classes. Obviously the guidance of learning activities is the most important single responsibility of the teacher. Since an effective guidance program permeates every aspect of the school program, it is essential that the guidance activities of the classroom teacher supplement and reinforce those of the regular guidance staff. Basically, guidance and instruction are closely interrelated. They have as their common purpose assisting the child to interpret and understand his school experiences.

There are numerous opportunities in every course for the teacher to render an important service in the guidance of pupils. Moreover, the guidance service which the teacher gives cannot be performed as effectively by any other guidance worker. This is true because of the pupil-teacher relationships inherent in a classroom situation and also because the content of most high school subjects lends itself to applications to many other situations, both in and out of school.

Guidance in the Core-Curriculum Class.—The core-curriculum class embraces the activities of the traditional home room, personal conferences, and recitation. The lengthened-class period, the informality of the procedures, and the plan of having one teacher as leader of the same class for a period of two or three years, tend to create a situation in which educational, personal, social, and vocational guidance can be given in an effective manner.

The teacher and pupils not only plan the units to be studied but also make decisions in regard to methods of procedure and evaluation. Reference to the titles of units often included in a core curriculum will reveal their possibilities for guidance purposes. Typical unit-titles are "How to Study," "Orientation to School," "Understanding Others," "Personality Development," "How to Spend Leisure Time Wisely," and "Holding a Job."

Guidance in the Various Subjects.—In schools which are organized in terms of separate subjects and daily recitations, effective guidance in the classroom is more difficult. The short class periods are likely to encourage the teacher to concentrate on mastery of subject matter and to ignore the personal and social problems of the students. Many teachers have been able, without "sacrificing" subject matter, to assist in the adjustment of their pupils by making appropriate applications of the instructional materials to life situations. In the subsequent paragraphs some of the possibilities for guidance in high school subjects are indicated.

1. *English.* The books read in a person's adolescent years exercise a strong influence on his attitudes toward life. The quality of one's tastes, preferences, and standards is largely established during the high school years. Fortunate indeed is the adolescent who is guided to books which fire his imagination and stir his enthusiasm for the positive, creative values of life. Under the leadership of a good teacher the writings of Emerson, Whitman, and Shakespeare open new vistas to the adolescent mind and spirit. Reading may also contribute to the vocational objective. Many books, both fiction and non-fiction, give interesting descriptions of various vocations. In oral and written English work, topics can be assigned which pertain to economic and social problems. Effective instruction in speech contributes to personality development.

2. *Science.* In biology and physics classes insights into modern social and vocational life can be acquired. Ideals and habits of vocational efficiency also can be developed, such as accuracy, impartial observation, suspended judgment, and thoroughness.

The opportunity afforded students to manipulate apparatus and materials in connection with science demonstrations and experiments gives a sense of reality to school work, thereby contributing to better school adjustment.

The interdependence of individuals and nations can be revealed by an understanding of the international character of science and invention. The scientific attitude acquired in science classes gives an objective approach to many personal and social problems.

3. *Social Studies.* Actual participation in the activities of various school and community groups is the most effective form of social orientation for the adolescent. These experiences should be accompanied by an intelligent understanding and knowledge of group behavior. One of the desirable outcomes of instruction in the social studies is an awareness of the significance of great economic and social developments.

A study of the characteristics of the leaders in government, politics, and social service gives a basis for an intelligent choice for students who contemplate entering those fields of endeavor. Textbooks should be supplemented by reading the biographies of such persons as Jefferson, Lincoln, and Jane Addams.

Contemporary magazines and pamphlets can be utilized in developing understandings and intelligent attitudes toward different racial and vocational groups. Orientation to new economic and social values is essential for living in the world of tomorrow. Supplementary reading materials, which reveal current trends as well as the hard facts of this atomic age, should contribute to the pupil's adjustment to the new conditions under which he will have to live.

4. *Mathematics.* An analysis of the content of a textbook in junior high school mathematics will reveal references to a large number of occupations. A recent examination[5] of a ninth grade general mathematics textbook disclosed that forty-eight jobs, ranging from airplane inspector and astronomer to stenographer and teacher, were mentioned. Many of the problems on budgeting, insurance, interest, and taxes provide opportunities for a consideration of the personal and social implications of these matters. Computations and graphs based upon the cost of training and incomes of members of various professions provide pupils with information which is relevant for vocational choices.

5. *Music.* The record of a pupil's performance can serve as a basis for vocational counseling in regard to work in professional music. The interests and skills developed in music classes may become the basis for many worthy recreational activities. Intelligent discrimination in radio listening, which should be one of the outcomes of music instruction, contributes to guidance in leisure-time activities. (See Chapter 17.)

6. *Art.* Some of the outcomes in arts and crafts provide opportunities for the discovery of special artistic ability. A knowledge of the uses of art in industry provides a more adequate basis for understanding both our cultural heritage and our industry. This knowledge may have particular significance for the vocational choice of some pupils. Worthy recreational interests may also grow out of the pupil's experiences in art classes.

7. *Foreign Language.* In Latin classes the values of a knowledge of Latin words to members of various professions should be revealed to pupils. In modern language classes, an understanding of peoples of other lands should result in more effective "world orientation" of pupils. The different stages in the development of occupations can be disclosed by a study of vocations in different countries.

8. *Commercial Classes.* A knowledge of acceptable standards of proficiency in accounting, typing, and shorthand provides students in high school classes with an important source of vocational

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[5] Tirga Ennor, "Occupational Guidance in a Ninth Grade Course in Mathematics," *El Paso Schools Standard,* XXII, 25-30.

information. The social responsibility of persons engaged in business should be emphasized as part of the counseling work in all commercial subjects in high school.

9. *Physical Education.* Mental hygienists are aware of the fact that many problems in mental hygiene grow out of an individual's feelings of physical inadequacy. In a physical education program of sufficient scope and variety, practically all pupils should be able to engage effectively in some games. Since physical and mental health are highly correlated, an adequate physical education program should serve to eliminate some of the causes of poor mental hygiene.

10. *Home Economics.* The personal and social adjustment of the individual is determined in no small degree by his success in achieving status as an effective member of a family group. The knowledges and skills acquired in home economics classes should assist the girl in becoming a more worthy member of a home. In units on foods and clothing the work of the dietitian and the costume designer can be revealed. Favorable attitudes toward homemaking can also be developed.

11. *Industrial Arts.* Special vocational and avocational interests often grow out of the pupil's experiences in the school shop. Personal initiative and independent habits of work can also be developed as a result of the pupil's planning, executing, and evaluating his own efforts in industrial arts courses. Worthy leisure-time activities are often fostered as a result of skills acquired in the school shop.

12. *Diversified-Occupations Course.* The opportunity afforded the high school pupil to work part time while he is in school may contribute greatly to his economic and social adjustment. In order for the work experience to be of the fullest significance, the school should exercise adequate supervision over the pupil's work assignment. Close coordination of his work and school experiences is also essential. Class discussions of problems of labor and management in the vocation in which he is employed or similar problems related to the profession represented should be conducted simultaneously with the work. From the guidance point of view, the teacher or coordinator should exercise care in assigning students to situations in which detailed or partial concepts of the occupation are likely to be obtained.

13. *Occupations Courses.* The teacher of an occupations course has an unparalleled opportunity to give students a general over-all view of numerous vocations. In order to achieve this objective,

the course must be more than a one-textbook affair in which pupils read and repeat verbal descriptions of vocations. Pupils enrolled in the course should interview representatives of local vocations, make field trips to places where various types of work are being carried on, and see films revealing the activities of workers. These activities tend to make the pupil's reading of vocational books more real and meaningful. If the occupations course is offered in the early high school years, it may provide pupils with a sound basis for making vocational choices and thus provide a "life-career" motive for their subsequent school work.

Questions, Problems, and Exercises

1. When you were in high school did you receive any valuable counseling or guidance from any teacher? Describe and evaluate it.
2. Take one side of the following question and make notes for a five-to-eight-minute talk on that side: "Guidance is distinctly secondary to teaching the subject and should be left largely to parents and other people outside the school."
3. Should guidance in school be left largely to specialists, or should each teacher participate materially in guidance?
4. Why are so many teachers not well equipped to give guidance service effectively?
5. Mention some types of attempts at guidance by teachers which are not sound.
6. What do you think are the problems of greatest importance on which high school boys and girls need friendly counsel? Do you know of any instances of young people becoming intensely worried or doing very unfortunate things? If so, what was at the bottom of their difficulty?
7. In what ways, if any, can the average high school teacher render service in vocational guidance?
8. What data or types of information about his pupils do you think the average teacher should have available and know how to use? the average home room counselor?
9. From the principles and techniques quoted from the Yearbook of the Department of Superintendence select three or four which you think are most important; three or four which you question as of doubtful validity; three or four which you don't understand very well.
10. Do you believe teachers should attempt to counsel students about sex problems, religious conflicts, family worries?
11. What kinds of problems should the typical classroom teacher refer to the principal? to the guidance expert in the school?
12. Examine a good adjustment inventory or check list and comment on its use, values, and dangers in a typical high school.

Chapter 23

SPECIAL EDUCATIONAL PROBLEMS

1. Extra-Class Activities

The successful teacher of today no longer thinks of extracurricular activities as an extra, a frill, a concession to student desire for play, but as an important educational experience and an integral part of the school program. How young people will think, act, and feel in the future can be influenced very materially by their experiences in extracurricular activities. From that experience they can acquire important habits, skills, interests, tastes, information, understandings, and attitudes as illustrated below for certain of the objectives of secondary education:[1]

Objective	Contributing Activity	Type of Outcome
Health and safety	Athletic teams of all sorts, hiking, outdoor clubs, biology clubs, nursing clubs, dancing, Junior Red Cross	Information about sports, games, animals, flowers, plants, scientific basis of health and sanitation, first aid, fire and accident prevention Habits and skills in games, sports, outdoor activities, dancing, first aid, avoiding accidents, and general bodily skill and strength Ideals of sound, healthy bodies and proficiency in physical activities Tastes for and interests in sports, outdoors, and health
Vocation	Sports and games, musical and other fine arts clubs, journalistic and forensic clubs, household-arts clubs; semi-scientific clubs (radio, photography, automotive, aeronautic); semi-vocational clubs (printing, millinery, cartooning, agricul-	Information concerning occupations (nature of work, rewards, chance for advancement, etc., and concerning pupils' abilities in different pursuits) Habits and skills: Those general habits (honesty, industry, and ambition) that make for vocational success; skills in one or more vocations or activities com-

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[1] From *Organization and Administration of Secondary Schools* by Harl R. Douglass, Ginn & Company, publishers, pp. 210-211.

Objective	Contributing Activity	Type of Outcome
	tural and commercial clubs)	mon to several vocations (salesmanship, accounting, writing) Ideals: of success, influence, independence, fair dealing, cooperation, and service Tastes and interests: explorations of such as a basis for vocational choice
Worthy use of leisure	Athletic and other sports; chess, checkers, and other games; musical and other fine arts clubs; foreign-language clubs; mathematics clubs; dramatic clubs; reading clubs; history clubs; sewing and basketry clubs; short-story clubs	Information about things of culture: art, music, drama, current and classical literature, and authors; about current social problems and events; about games and sports; about nature, scientific phenomena and laws Habits and skills: in fine arts, games and sports, and reading Ideals: of culture, dignity, self-respect, and of approval of others in such matters; tastes and interests in fine arts, sports, games, hobbies of various sorts
Command of fundamental processes	Practically every activity, particularly those involving the reading of books, the writing of reports, and the keeping of accounts, giving oral reports or participating in discussions (journalistic and forensic activity)	Information—how to read, to study, to write, to speak, to solve problems Habits and skills in the application of computation, study methods, skills in written and oral communication, getting on with other people Ideals, tastes, and interests: continuation of desirable types begun in the elementary school

So well accepted as educational experiences have student "activities" become that some writers have advocated dropping the word *extracurricular* and speaking of such activities as part of the curriculum or as "co-curricular" activities.

The most desirable outcomes will not automatically result from student participation in haphazard extracurricular activities. If the maximum educational benefits are to result, the activities and the student participation must be planned with definite educational objectives in view just as in the case of teaching and curricular experiences.

When a teacher is assigned the supervisorship of a student activity, he should think through carefully the more important contributions to educational objectives that may be made through the medium of that activity and read what others have said about the possible contributions. He should then think of the various mental, physical, and other activities in which students participating in the activity will engage and evaluate each of these in terms of what contributions they may make to skills, attitudes, ideals, interests, information, habits, and understandings. The results of participation should be thought of as:

1. Contributing to important objectives of a nature not provided for by the curriculum, e.g., outcomes involved in cooperation, leadership, and initiative
2. Contributing to objectives of at least moderate importance not provided for in the curriculum, e.g., accounting methods, athletic skills, and dramatic ability
3. Reinforcing the curriculum by contributing additional experience to important objectives not adequately provided for in the curriculum, e.g., those outcomes involved in oral and written expression, understanding of community life, and social competence
4. Contributing to relatively important objectives, e.g., pride in achievement of class, feeling of oneness or unity in group endeavors, loyalty to larger group, good sportsmanship
5. Avoiding repetition of experiences provided in the regular curriculum, e.g., practice in penmanship, typing, or music
6. Avoiding the formation of erroneous ideas or false standards of values such as:
    - (a) Wrong impressions about business and business methods
    - (b) Superficial or unbusinesslike methods of accounting
    - (c) Developing snobbishness and conceit among cliques
    - (d) Developing undemocratic or unsocial political practices
    - (e) Developing an unnatural obsession to win at all costs
    - (f) Developing inferior techniques in speech, writing, singing, playing an instrument, etc.
    - (g) Excessive participation resulting in neglect of other educational activities, overwork, loss of sleep, etc.
7. Contributing to guidance and personality development, e.g., helping socially inferior individuals to develop skills in group participation to build up self-confidence

Good planning and supervision of extracurricular activities involves the reduction to a minimum of waste motion and wasted time in the form of repeating specific types of activities far beyond the point where diminishing returns begin. In the classroom, teachers usually avoid waste through excessive repetition (indeed they are forced by lack of time to go to the other extreme). In extracurricular activities, it is a rather common occurrence for students to continue a type of experience long after educational returns begin to decrease.

Good planning and supervision of activities also calls for careful consideration and analysis of the types and relative importance of outcomes. The matter cannot be dismissed by thinking of the results of participation as "training." "Training" must be thought of in more specific terms, e.g., as acquisition of information, understanding, ideals, interests, attitudes, habits, or skills. Careful analysis must be made for concomitant outcomes, and they too must be scrutinized, evaluated, and credited or charged to a particular activity.

The better-trained and more successful teacher today does not abandon educational statesmanship to cater to the whims, appetites, and prejudices of the untrained adults of the neighborhood or the untrained and immature young learners. Compromising when necessary or feasible, he steers a firm course toward a long-range educational objective.

The less well-trained teachers and those lacking in character tend either to lose sight of educational objectives or to sacrifice them in the interest of expediency or personal popularity. A great many supervisors of student activities think more of putting on a public exhibition, which is pleasing to the adults and seems to reflect credit upon the "coach," than of the training received by the student participants. In fact, in some communities the school under weak leadership is pretty deeply in the entertainment business. Some school executives are prone to think in terms of attendance and gate receipts, strange and reprehensible as that may seem from an educational point of view.

There are other important considerations which if kept in mind and observed in the management of student activities will contribute to greater educational returns. Among the more important are the following:

1. The educational value of an activity is directly proportional to the number of individuals participating.
2. Some individuals need the type of training provided by any given activity much more than others.
3. The importance and values of the activity should be recognized by students, teachers, and parents.
4. Activities must not be dominated and supervised too much in detail by the sponsor or coach.

From these considerations, many suggestions for the conduct of extra-class activities may be derived. Among them may be mentioned the following:

1. Care should be taken that enough activities are provided for all, e.g., not merely one team, or one cast for one play, or a small staff of students for the annual.

2. Participation, particularly in the roles of leadership, should be rotated not only to provide opportunities for more individuals, but to prevent participation by a few students beyond the point where diminishing educational returns result.
3. Care should be taken to encourage individuals most in need of a certain type of experience to participate in an activity likely to provide that type of experience.
4. Those already well trained along certain lines should permit others more in need of particular types of training to participate.
5. Recognition of the importance of activities should be evident in the daily schedule, in the selection, promotion, and salary of teachers, and in such matters as marks, credits, etc.
6. Teachers should recognize that the educational value of extra-class activities is dependent in part upon the opportunities for planning, initiative, organization, and leadership by the learner-participants. An important characteristic of activities is the greatly diminished teacher domination and the detailing of supervision and leadership as compared to classroom learning.

The following additional suggestions apply especially to the work of club sponsors:

1. The sponsor should give careful thought to the kinds of activities the club may profitably carry on and the way in which those activities may be made most educational.
2. The sponsor should meet with committees frequently, especially in the early days of the club, until sound patterns of activity are established.
3. The sponsor assists the club in determining the qualifications for its officers but does not bring pressure to bear in favor of specific individuals.
4. The sponsor should guide the officers of the club in their thinking but avoid attempting to shape their conclusions too aggressively.
5. The sponsor should permit the club, its committees, and its officers to use their own judgment even when their decisions seem not to be the best. The good sponsor realizes that such a plan is sound educationally, and should be departed from only in rare cases of fundamental principle and unusual importance.

2. The Teacher and the Home Room

Functions of the Home Room.—In many schools there is in operation some form of home room organization. Where this is the case, each teacher is usually asked to act as an adviser of a home room group. The organization, function, and activities of home rooms vary greatly from school to school. In some the home room period is utilized merely for checking attendance and making announcements. In others, it is a functioning guidance and educational agency of the school. There are four principal functions of a complete home room: (1) administration, (2) guidance, (3) extracurricular activity, and (4) curriculum supplementation.

1. *Administration.* In many schools the principal function of the home room is as an auxiliary administrative agency. A short period (five to ten minutes) is provided in the daily schedule. At this time attendance is checked, excuses for absences and tardiness are considered, announcements are made, and textbooks and supplies are distributed.

2. *Guidance.* In many schools home room sponsors are counselors for their groups. They assist them in learning about the school, its curricular and extracurricular opportunities, and its regulations with respect to halls, library, assemblies, etc. The sponsors assist the students in thinking through their selection of courses for the next term and in planning their educational future.

In such schools the sponsor attempts to help the individuals of his group realize their potentialities as students. An effort is made to discover the reasons for inferior achievement and for achievement of good and superior students which is definitely below what may be expected from a knowledge of their intelligence and previous scholarship. This involves personal interviews, conferences with parents, giving of tests, and similar guidance activities.

Home room sponsors are usually encouraged to take an active interest in their particular group of students, regarding them as proteges and helping them solve many of their problems of adjustment and growing up—especially social problems. The better sponsor soon becomes a confidant of at least some of his students who bring to him some of their personal problems.

The home room sponsor must realize that there are many problems which the sponsor cannot solve. Too much advice of a positive sort is a type of quackery which should be avoided, though the sponsor should at all times be a sympathetic listener with an optimistic and encouraging though not aggressive attitude.

The home room sponsor must also acquire as rapidly as possible a great deal of information in regard to each member of his group, especially data relative to achievements, abilities, interests, home life, social activities, vocational activities and plans, character, disposition, and problems of various sorts.

3. *Extracurricular Activity.* The home room unit serves the extracurricular function in three ways. In the first place, home room periods may be employed to explain, arouse interest in, and promote greater participation in extracurricular activities of the school through the medium of announcements and talks by club sponsors or student leaders.

Secondly, the home room group may constitute a unit for participation in extracurricular activities of the school as a whole. It may elect representatives to various all-school bodies or discuss all-school policies and candidates. It may serve as a unit in various types of contests—debates, athletics, sales, etc. It may contribute programs to the all-school assembly.

Thirdly, the home room group may carry on their own extracurricular activities, e.g., home room programs consisting of musical numbers, debates, interpretative readings, and the reading of an unpublished home room paper prepared by a committee of members of the home room.

4. *Curriculum Supplementation.* In schools in which the home room period occurs twice or more a week or not less than a total of ninety minutes a week, a very valuable type of educational activity may be carried on. At these times there may be discussions for which no adequate provision is made in the regular required curriculum. Among the subjects discussed in many schools are the following:

1. Buying and consumer problems
2. Vocations and how to choose one
3. Personal appearance
4. Going to college
5. Hobbies
6. Movies
7. Safety
8. Religion
9. Our parents
10. Marriage
11. Various ethical questions
12. Books I like
13. Christmas (or some other season)
14. The Russians (or some other people)
15. The life of some great man or woman
16. Radio programs
17. Newspapers and magazines and their reliability
18. Current events

19. Price control and inflation (or other current issues of importance)
20. Labor unions, their functions, values, and dangers
21. Monopolies, their values, dangers, and origins

Suggestions for Home Room Management.—In many schools home rooms have not been very successful. In some they have been discontinued and in others they are still operating in a feeble, superficial fashion. The principal reasons for their lack of success are not hard to discover. In the first place, teachers entered upon the responsibilities of home room management without adequate preparation and without adequate programs. Home room sponsors should work out a program for each month of each semester. Each program should be part of an integrated and correlated program for the entire school. Teachers should not worry about having their home rooms planned, for the plan may be departed from whenever it seems wise. Below is a sample list of home room topics for the first and second semesters of a ninth grade:

1. Home room organization
2. Graduation requirements
3. Reading in relation to study
4. Courtesy as a school asset
5. Technique of debate
6. Self-analysis
7. Service
8. Three-year plans
9. How to study
10. Extracurricular point system
11. Motor laws and safe driving
12. Debate
13. Debate—summary
14. Self-rating (two weeks' time allotment)

Another factor contributing heavily to the failure of home rooms has been the failure of teachers to realize that the home room should be managed very differently from the classroom. It is a place for spontaneity and leisurely discussion, and certainly not a place for domination and quizzing by the teacher. A topic which could be studied and recited (and forgotten) in two days in a class might well occupy ten or twelve home room periods. It is not the ground covered that counts.

A third contributing factor is the failure of teachers to realize the educational importance of home room discussions. "Schoolmarm" like, they follow an impractical theory that the important work of the school is the assignments on condensed bookish subject material and the temporary learning of it by students. Because of this pedagogical provincialism, they do not give adequate time to preparation and planning, and they do not impress upon pupils and parents the important educational potentialities of home rooms.

A fourth factor is the lack of books, bulletins, and pamphlets in the school library to which home room groups may be referred for reading on various topics. This weakness is not so important as formerly. Not only is there a considerable amount of material suitable for use in home rooms being published each year, but schools are building up adequate collections for use in guidance and in home room programs.

In this important phase of his responsibility as a home room sponsor, the teacher should learn from the mistakes of those who learned the hard way (or never learned at all). He must (1) plan and prepare carefully, (2) acquire skill in conducting home room discussions in harmony with an appropriate philosophy, (3) convince others as well as himself of the importance of home room work, and (4) build up collections of suitable readings and exhibits.

The success of the home room is also dependent to a considerable extent upon the degree to which a spirit of unity, cohesion, and mutual interest is built up among the students composing the group. They should learn not only how to work and to compete as a group, but to feel that each has at heart the interests of all the others in the group. There should be built up a spirit of mutual helpfulness and mutual concern and pride, particularly in time of misfortune and of unusual achievement. The home room sponsor should so manage that he is always considered as one of the group as well as its principal leader and champion.

The home room teacher must continue to study this phase of his work, including its relation to guidance,[2] reading, and taking courses which will increase his competence.

3. SUPERVISION OF LABORATORY, STUDIO, AND SHOP LEARNING

Since 1900 increasing recognition has been given to the desirability of providing for learning of the "activity" type, e.g., clothing construction, performing "experiments," making wood and metal objects, painting, weaving, drawing, and other expressive and creative arts. Not only have laboratories, shop, and studios been provided and equipped for instruction in art, science, industrial and mechanical arts, and home economics, but the idea has been adapted to use in "laboratories" for the social studies and English composition.

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[2] See Chapter 22, "The Teacher and Guidance."

In general the principles and procedures employed in the classroom apply to the direction of learning activities in the laboratory, shop, and studio, but in a somewhat specialized way, as there are special problems to be faced and solved. The learners may work individually in two different types of situations: (1) each on a different problem or project, or (2) all on the same problem, but independently and each at his own rate. They may likewise work cooperatively in small groups of two to five learners.

Special Objectives of Laboratory and Shop Activities.—Laboratory, shop, and study activities serve several types of purposes, and these must be clearly visualized by the teacher, with special attention to which is the most important from time to time. The more important of these types of purposes are:

1. To provide opportunity to develop motor skills as in the use of certain tools, e.g., drills, saws, scissors, sewing-machine, brushes, etc.
2. To provide opportunity to develop mental abilities in planning, coordinating, overcoming problems and difficulties, and problem-solving as applied to creative and constructive undertakings
3. To provide an experiential basis for understanding principles, laws, and rules and their application
4. To provide an experiential basis for better acquaintance with the nature of materials—woods, chemicals, fabrics, foods
5. To provide opportunity for development of student initiative, ingenuity, and aggressiveness
6. To develop and increase interests in various aspects of the subject taught and its corresponding areas of practical life
7. To provide a basis for imagery to make more real and meaningful the verbal materials in books
8. To train in the scientific method and attitude and to develop an appreciation of it
9. To develop a favorable atmosphere for the study of the subject as well as an intelligent attitude toward work in general
10. To develop understanding of the practical significance of the subject

One of the greatest limitations and dangers in laboratory direction is the unintelligent use of a manual without clear-cut realization of the purposes of the units of learner activity and of their relation to the rest of the work of the course. The work, while concrete and involving activity, is actually abstract, formal, and perfunctory. Learners follow blindly the instructions in the manual, obtain data, make drawings, write out answers to questions in the manual, and fall far short of acquiring the skills and understandings intended.

Laboratory or Demonstration.—As the laboratory movement swept the country between 1900 and 1925, teachers seemed to be more interested in developing laboratories and equipment and extending laboratory work than in utilizing the laboratory as part of an effective and coordinated learning situation. They seemed to be rather well satisfied if twice a week or in a double period students were going through the motions of performing experiments. Little thought was given to the possibility that educationally the same or better results could be achieved by the use of other methods involving less time expenditure.

Since 1920 a reaction has set in—a trend toward the use of more visual material, a greater use of demonstrations, and less laboratory experimentation. Teachers began to realize that the so-called experiments were not experiments at all in the true sense of the word, but exercises intended to demonstrate laws, principles, and phenomena and to demonstrate the properties and reactions of elements and compounds. Controlled experiments by the dozen have been conducted in the last five decades to test the relative effectiveness of demonstration and of laboratory methods.[3] The general conclusion of those experiments is that, as far as the content of science courses is concerned, the demonstration is at least equally effective, and that, in high school at least, the use of the individual laboratory exercises contributed little to the experimental capacity of the learner, though he did develop useful laboratory knowledge and skills.

Integration of Laboratory-Shop Activities with Rest of Courses.—In the last quarter-century, there has been a pronounced trend toward a more effective integration of various methods—reading, discussion, lecture, demonstration, and laboratory exercises and experiments. Especially where the longer single daily period is used, there are no certain days of the week given over regularly to laboratory manual exercises. Instead work in the laboratory is done whenever it seems to be called for and most useful in relation to the other learning activities.

In the study of industrial and aesthetic arts and crafts, home economics and household arts, the need for laboratory activities is of even greater value than in the study of science and can be substituted for by demonstrations only in small part, although in these subjects demonstrations play a most important part. The teacher who would be more than ordinarily successful must become expert in the techniques of "showing how and why" by means of demonstration.

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[3] See Francis D. Curtis, *Digest of Investigations in the Teaching of Science.*

Directing Learning in the Laboratory.—Certain principles and practices which underlie successful direction of learning in the laboratory are described in the following paragraphs.

In the first place *the course of study must be examined carefully* with a view to discovering (1) at what places and in connection with what topics laboratory learning exercises are necessary or desirable, (2) to what educational objectives of the course the laboratory exercises should contribute, and (3) what kind of exercises are most likely to be effective in contributing to those objectives. In deciding what laboratory exercises are to be employed, the following criteria should be kept in mind:

1. Degree of suitability to maturity and background of learners
2. Time necessary for completion and degree of adaptation to length of class periods
3. Equipment and expense involved
4. Infallibility, i.e., the certainty that the exercise will terminate successfully
5. Value in relation to objectives and other parts of the course

In making this important survey the teacher should examine carefully the best manuals and workbooks available. The work of the semester or the year should be planned to combine the laboratory learning activities with other types of learning and teaching activities, e.g., discussions, explanations, recitations, demonstrations, supervised book study, quizzes, field trips, and classroom visual lessons.

Next, *a survey must be made to ascertain what equipment and materials will be needed* for the laboratory units to be employed. A comparative survey is then in order of the equipment and materials on hand, and the equipment and materials which must be ordered at once. Plans must be laid for ordering later or for making the needed equipment. If neither plan is feasible, the only alternative is to eliminate the laboratory unit. In this connection, each laboratory or shop unit should be reviewed with respect to its relations to the objective of the course and with respect to its coordination with related materials in the course.

When the course begins, *careful preparation must be made for each laboratory unit,* involving the following:

1. Preparing the equipment: testing it and getting it ready for use by the learners
2. Making available to the learners the materials needed and planning or becoming acquainted with plans already made for purchase of materials used by the student
3. Preparing the learner by means of introductory reading, explanations, and careful assignment. The assignment should not only include laying out the job and seeing that adequate instructions are given the learner at the beginning or during the progress of the unit, but also making certain that the learner understands the objectives of the unit. *Allow for pupil participation in planning the procedure as far as practicable.*

As the course proceeds, *stock must be taken of the individual abilities, backgrounds, and needs of the learners,* and provisions for:

1. Especially challenging tasks for the more capable and the more independent learners
2. Especially adapted tasks for those most capable and most independent
3. Informal plans for assisting those most likely to need individual assistance

Principles and procedures for supervising laboratory learning are not essentially different from those applying to other types of learning situations. Among those which should be kept in mind are the following:

1. Watch closely for opportunities to give individuals or the class as a whole supplementary and remedial instruction.
2. Observe closely to avoid the waste of materials, the abuse of equipment, or injury to the learners.
3. Adapt the amount and nature of assistance given the individual learner to his probable needs and abilities. Avoid doing for a learner what he can do for himself thereby depriving him of an educational experience as well as encouraging him to be dependent. Frequently give hints, cues, or references. Often answer a question with a question. Encourage the learner to think for himself.
4. While permitting cooperation among learners when clearly advantageous, insist that all individuals refrain from interfering with the right of every individual to work under conditions free from interruptions and distractions.

5. See that each laboratory period starts off without pupil loitering and confusion. Check quickly to discover the reasons for any learner's not starting on his project promptly. Develop good work standards.
6. See that at the end of the hour materials and work completed, or in the process of completion, are put away in such a manner as to insure their safety. See that the same care is given all equipment used as would be expected of a workman. This is valuable training in itself and should be insisted upon consistently. When necessary announce the time for preparing to leave the laboratory.
7. Upon appropriate occasions raise questions or make supplementary assignments to be done before the next laboratory period.

The supervision of laboratory periods must include supervision of the recording of data. Particularly in the early part of the course, the instructor must observe and offer suggestions in regard to recording data.

Occasionally time should be allowed for discussion of the exercise and the reports written. This may legitimately be done either in a laboratory or in the discussion period.

Culminating Activities.—Depending upon the nature of the work, provision should be made for some form of culminating activity such as:

1. Comparison and discussion of findings and their implications for different learners
2. Special reports by learners who have done things not done by others of the class but of interest and probable value to them
3. Self-evaluation and criticisms of work done
4. Evaluation of the work of others in the class—perhaps by means of score cards or other rating devices, which may be prepared by a member of the class
5. Public exhibition of completed projects
6. A test covering the principles and facts involved

4. Teaching Large and Small Classes

Teaching the Large Class.—For one reason or another teachers are called upon sometimes to teach classes of abnormally large size. In some schools a small daily load in terms of number of classes is achieved by increasing class size. When a class becomes larger, the opportunities for attention to individuals as individuals become less, and methods suitable for smaller classes are not practical or possible. Techniques must be devised and substituted which will maintain as far as possible a good learning situation. Some of the techniques which have proved successful will be briefly discussed here.

In the first place it should be obvious that the opportunity for each individual to learn from his own actual participation and the motivation resulting from the likelihood of his participation in recitation grows less and less as the size of the class increases. Consequently, some satisfactory substitute method must be employed. One of these is the greater use of telling, lecturing, or demonstration and the greater care with which pupils called upon to recite are selected. Telling should be more carefully planned and must be improved both in clarity and in appeal. It must be more interesting and there must be less necessity, as indeed there is less opportunity, for each student to ask questions for increasing his understanding. The use of more visual aids and realia also is necessary in teaching the large class.

Secondly, something must be found to serve the purpose of discovering what the students are not learning. Oral questions of individuals are not effective enough. Calling for raising of hands on various possible points of misunderstanding is useful, particularly if the teacher has canvassed the situation in advance for the points more likely to cause confusion. There is also need for more numerous written quizzes.

Since there is less opportunity for evaluating the progress and achievement of individuals by means of oral discussion, there is need for a greater number of written examinations and other non-oral means of measuring growth and achievement—written work and the like to be prepared outside of class.

In larger classes certain items of class management are essential. Among these are the following:

1. Checking the library to see if enough copies of reference materials are available
2. Identification of suitable alternative reference materials
3. Use of a seating chart and a permanent seating arrangement in the classroom
4. Planning and employment of a certain routine for collecting and returning papers, perhaps involving the use of student assistants
5. Use of mimeographed instructions and assignments to save class time
6. Greater use of objective test exercises in order to avoid the expenditure of an excessive amount of time in reading papers

7. Planning of seat work and blackboard work so that all may be participating in situations where only a part of the class may go to the blackboard
8. Greater use of conferences with individuals about their work and their difficulties
9. Greater use of data in regard to students in school records as a substitute for learning about them in class
10. Planning for rotation of learning activities when there are not enough tools, tables, or learning stations
11. Use of pretests to obtain a clearer picture of varying abilities of pupils and range involved

The Small Class.—Much of the procedure especially appropriate for a small class may be implied from the discussion of procedures in the large class, e.g., less lecturing, less written work, fewer written examinations, and more pupil participation and questions.

In the small class there is greater opportunity for individual instruction—helping the individual and adapting materials and assignments to his ability and his interests. Consequently, there may well be more time spent in supervised individual study as contrasted with group procedure.

If a class is quite small, let us say not to exceed seven or eight, it is often practical to teach it in the same room and in the same class period with another very small class. While this procedure is not desirable, it is clear that much valuable teacher time can be saved as compared to allotting two whole class periods to two small classes. When such an arrangement is employed, the teacher should plan the work on the basis of more pupil independence and individual progress with supervised study. The teacher should plan quite carefully his presentations of new materials and processes, devoting on the average not much more than one hour a week to each class as a class, leaving the rest of the time for work with individual students.

Questions, Problems, and Exercises

1. Select one extracurricular activity and list in order of importance the contributions that might be made to the objectives of education by that activity, if it were organized and managed most effectively.
2. List several ways in which activities are commonly managed which result in less-than-possible or negative contributions to objectives of education.
3. To the suggestions given for directing activities in this chapter, add two or three more based upon your own school experience.

4. What data should a home room teacher have concerning the members of his home room group?
5. What are the principal differences between the spirit and philosophy of home room discussions and classroom teaching?
6. List five important home room committees and the principal duties of each.
7. Do home rooms contribute materially to the objectives of education? Which objectives? In what ways?
8. Make a list of ten to twenty suggestions for supervising an industrial art shop for student learning in one of the following: (a) a laboratory, (b) a shop, (c) a studio, (d) a home economics laboratory.
9. For one of the above, list in the order of importance eight or ten educational objectives, e.g., acquiring skill in the use of certain tools.
10. List eight or ten suggestions for managing large classes in the subject you prefer to teach.
11. List eight or ten suggestions for teaching small classes in your favorite subject.
12. What are the principal objections to large classes? How valid is each? What can be done to overcome those objections, at least in part?

Chapter 24

SPECIAL EDUCATIONAL PROBLEMS (CONTINUED)

5. GETTING READY FOR THE YEAR AND THE FIRST DAY

To be most successful the teacher should be continuously preparing for the work of the ensuing year, gathering ideas for making his work more successful, and ordering or making preparation to order equipment, instructional materials, and books, periodicals, pamphlets, and bulletins for the library.

Ascertaining the Nature of His Duties.—If the teacher accepts a new position, he should ascertain the nature of the work he will be expected to do, what subjects he will teach, with what extracurricular activities he will assist, and with what other aspects of the work of the school he will be associated, such as home rooms, counseling, and public relations.

He should obtain copies of local and state courses of study, if they are available. He may also obtain city courses of study published by other systems for his subjects or examine those available in the curriculum collection at some good institution. From these courses he should gather many ideas about the materials and methods he could employ to advantage. He should also examine good textbooks in the subjects he will teach, including those employed the year before in the school in which he will teach.

If he discovers that there are areas of subject matter with which he is not fully conversant, he should not only read several textbooks in these areas but also some of the supplementary references, or at least make plans for reading them during the year. If he is to teach a subject in a field in the teaching of which he has had little training, he should obtain and read at least one and preferably two or three good books on the teaching of that field or subject.

If he is to be responsible for one or more extracurricular activities, he should read a good book pertaining to that activity. If he is to assist as home room sponsor or in counseling, he should have read at least one good modern book in that field.

He should if possible visit the school building to inspect the equipment and the library and other facilities for teaching his subject. If these are deficient in important respects, he should see if they cannot be built up in time for use in the following year.

Learning About the School.—The teacher going into a school for the first time will be wise if he learns a great deal about the school before the year begins. He will wish to learn about the organization of the school, its curriculum, and its plans for management, including such things as:

1. The hours during which teachers are expected to be in the building
2. How absences and tardiness are reported, recorded, and cleared
3. The standards and rules for pupil conduct in the halls, in the classroom, etc.
4. The amount of home study which is expected
5. How and when teachers may requisition equipment and supplies
6. The rules for operating heating, ventilation, and lighting and for use of janitorial service
7. What is expected of teachers in matters of public relations, including school publicity
8. Whether it is customary to call students by their first or last names
9. The marking system used
10. Facilities for mimeographing
11. The provision of textbooks, workbooks, and supplies for students
12. Special duties: lunch hour, halls, etc.
13. Library facilities and rules
14. Attendance at school functions

Among the more useful sources of information about these things are the following: the handbook for teachers, supervisory bulletins and announcements, teachers who have taught there previously, and the principal of the school. If a handbook or supervisory bulletins for teachers have been issued, these may usually be obtained from the principal or superintendent.

Learning about the Community.—The teacher new to a community should acquaint himself in advance or early in his teaching experience with various aspects of community life. He should know how the people earn their living, what the principal industries are, and what types of homes are most common in it. This information will enable him to understand better the background and interest of the students and the interests of the parents.

He should discover what the principal religious institutions are, and the degree of sensitiveness to religion the community possesses. He will wish to know something about community attitudes and social practices relative to card-playing, dancing, and such matters. He will want to know what nationality and racial groups are represented in material numbers. He will find it useful to know what cleavages or factional differences are prominent in the community with respect to politics, religion, economic interests, and nationality.

Knowledge of all these things will enable the teacher new to a community to avoid discussions in class or in conversations outside of school hours which are likely to generate much more heat than light and consequently to develop antagonism to the teacher which will handicap him in his work. It is not intended to recommend that the teacher play up to local prejudices and avoid discussion of all controversial matters, but the knowledge in advance of what matters are the center of deep-seated attitudes and emotions will enable the teacher to avoid innocent stimulation of opposition, to decide what controversial matters are worth discussing despite local differences, and to plan carefully such discussions as are likely to stir up critical reactions in and out of school.

If the teacher knows what factions exist and who the leaders are, it will enable him to avoid remarks which have no special purpose or significance, although this will be unwelcome and will be held against the teacher. Success in teaching is to some extent at least a matter of diplomacy and strategy which must be planned in the light of the local situation.

The teacher should familiarize himself with the potentialities of the community as a curriculum resource, e.g., factories, city hall, police headquarters, hospitals, newspapers, packing plants, historical sites, slums, centers of transportation, and communications activities.

Learning about Pupils.—It is certainly not time wasted for the teacher to acquire what knowledge is available concerning the pupils he will teach during the coming year. Useful knowledge of this type includes:

1. The general level of intelligence of the student population of the school, particularly as indicated by tests of intelligence and of school achievement
2. The general pattern of pupil attitudes and school traditions, which may be learned from older teachers, school publications, etc.
3. Problems that have existed with respect to the general morale in the school, which may be learned from parents, members of the board of education, and older teachers

4. The general level and the spread of student achievement in the previous year in the fields he will teach, which may be learned from the other teachers and the school records
5. The names of, and information concerning, pupils with unusual problems, which may be learned from other teachers and the principal
6. The names of the brightest students, who should be given educational tasks especially adapted to the bright, as indicated by school marks and intelligence tests or as may be learned from other teachers
7. The understanding that comes from a personal acquaintance with at least a few of the youngsters in the community—an acquaintance that begins and develops on a non-school basis before the opening of school
8. The summer employment activities of pupils in the community
9. The more common leisure-time activities in the community

The First Day.—School boys and girls are like all other human beings in that they are inclined to make up their minds about another person upon the basis of first impressions to such an extent that it requires much acquaintance of a contrary nature to correct those first impressions. Not only the students, but in small communities parents and others, are curious about new teachers and usually eager to listen to the remarks of the students. It is therefore very important, especially in the case of new teachers, to get off to a good start the very first day.

Among the more important suggestions which are essential to making a good beginning the first day and the first week are the following:

1. Be prepared with as much knowledge of your students as possible.
2. Have the first week's work planned very carefully, but be ready to deviate from the plan as the need may arise.
3. Make definite assignments involving a reasonable amount of definite work to do.
4. Check on the previous assignment very carefully the first week or two.
5. Do not attempt anything spectacular or radical during the first few days.
6. Do not be too severe or too cordial and informal—be natural.
7. Make careful preparation in advance:
    (a) To see that chalk, erasers, etc., are available if needed
    (b) To check to see that any equipment or materials to be used in the way of visual or auditory aids are available and in working order

(c) To ascertain if textbooks, workbooks, or other similar needed materials will be immediately available

(d) To provide for work to keep pupils busy, especially if textbooks, workbooks, paper, or other equipment are lacking

8. Comment only to a minimum extent about yourself, your standards of discipline, etc. Keep the discussion of both pupils and yourself on the work at hand.
9. Avoid any unusual tenseness or self-consciousness. Do your best to feel at ease and confident.
10. It is very desirable to be able to call students by their names as soon as possible. For that reason new teachers and teachers in large schools should prepare in advance for each class on a piece of cardboard or paper not less than 8½ x 11 the basis for a seating chart, perhaps in the form of intersecting lines forming rectangles for as many rows and as many seats as there are in each row. In these rectangles may be written the name of each student according to where he sits. Naturally, the teacher should become independent of the chart as soon as possible. Correct pronunciation of all names should be learned at the outset. If there is any doubt, ask the pupil concerned to pronounce it first.
11. In smaller schools it is well to make a special effort to come to know, in the first few days or weeks, the student leaders, to call them by name, and unostentatiously to establish cordial relations.
12. If textbooks or supplies are to be distributed, this should be planned and the teacher should know where and when they may be obtained, what records should be kept, and how the students are to make payments or deposits for them.
13. Without ostentation the teacher should give the impression that he knows what he is about. Explanations of the reasons for procedure and excuses are definitely to be avoided.
14. Care should be taken in planning each day's class with a view to having the subject matter and procedure well in mind including, of course, the assignments.
15. Special attention should be given to seeing that the work of the first week is not dull, though it is not wise to attempt to make the work far more interesting than the work of later weeks will be.
16. The teacher should avoid the extremes of aloofness and of too energetic effort to become friendly and informal at once.
17. In many classes it is useful to ascertain how well prepared the students are for the work ahead. This may be done by means of a formal placement test, by board work, by written assignments, by carefully planned class discussion, or by a combination of these. Ordinarily time should be taken to review only those things upon which a considerable number of the students are weak and which are prerequisite to good work in the class. A few individuals may be asked to do a little extra remedial work.

18. The new or beginning teacher should not hesitate to consult immediately older teachers or the principal on any and all perplexing problems rather than to permit a situation to get out of hand or to work at a disadvantage.
19. In matters of discipline the new teacher should act with confidence and restraint. Petty infractions should be overlooked the first day or two, but disturbing conduct must be dealt with in a firm way indicative of self-confidence.
20. All reports called for by superior officers should be handed in promptly. Promptness is unusually important at the opening of the year.
21. Be familiar at the very start with general school regulations in order to cooperate with authorities and see that regulations are observed from the start.
22. Reveal a sense of humor and a basically human disposition. (This can be overdone just as severity is so often overdone the first week.)

6. THE TEACHER AND THE COMMUNITY

Learning about the Community.—In the previous chapters it was suggested that prior to beginning his work in a new community the teacher should acquire considerable information about the community in which the school is located—its industries and civic institutions, its religious attitudes and attitudes about social practices. The gathering of information of this sort should continue throughout the teacher's experience in the community. He should always be in search of opportunities to relate his instruction to the community, using the community as a basis for making verbal instruction more concrete and more meaningful.

Establishing One's Self in the Community.—The teacher should proceed cautiously but definitely and systematically to become a part of the local community. Because of the fact that the teacher's personal contacts are largely with the children instead of with adults, it is an easy matter to live a life aloof from the community life. This, together with the fact that teachers new to the community are usually young people, unmarried, and already have other home community connections, makes for the unsatisfactory and somewhat dangerous situation of the teacher living in a community, being a community servant paid with tax money, and yet not being a part of the community. No other type of public official would risk such an untoward condition.

The teacher in the small community should attend some local church from the outset even if not a church member, and he should learn the names of adults in the community and form the practice of calling them by name, greeting them and "passing the time of day" with them upon every occasion. The teacher should accept all reasonable invitations to participate in the social life in the community. He should not associate exclusively with other teachers but mingle freely with other persons. Above all, the teacher should attend all meetings of the P. T. A. and should at the meeting greet those whom he has met, meet others, and learn as quickly as possible the names of as many parents of his students as possible. The importance of establishing, maintaining, and extending good public relations is far greater than many teachers realize.

Conforming to Local Standards.—The teacher, like many others in his community, particularly the other professional people, physicians, attorneys, public officials, is dependent for his professional success upon the good will and respect of the people of the community. Every community has its standards of social conduct which it expects to be met. Because of his close association with young people and the fact that high school students and the community youth in general pattern themselves after the younger teachers, the teacher is in a particularly public position. Young people in the community who oppose the wishes and restrictions of their parents by saying, "Why shouldn't I do that or go there? Mr. (or Miss) Teacher does!" are making trouble for the teacher.

The teacher, therefore, must learn what the community standards are. If they are intolerable to him, he should move to another community at the end of the year. He should observe the local standards as long as he is in the community.

With respect to many of these things, it should be noted that the first year in the community is the most critical one. After a teacher has been in a community for several years, particularly if he has made many friends and has a wide acquaintance, he may do and say things which would be most unwise before he gained acceptance as a member of the community group.

Specific Suggestions.—Particularly in small communities the teacher should observe the following cautions:

1. Be careful not to criticize any individuals in your community. It is amazing how quickly and surely such remarks get to the individual criticized or to his friends.

2. Do not be given to praise of individuals except in the manner of seconding praise of others. Enemies of the praised individuals are prone to assume that you belong to the other crowd.
3. Patronize local stores for the very great part of your expenditures.
4. Never speak disparagingly of the community or its institutions, no matter how pitiful they are or how much you hear others criticize. Criticism from the "outsider" is rarely acceptable.
5. Be cautious in speaking your views on controversial matters—particularly if they do not concern your students and the welfare of young people. Do not attempt, particularly at first, to indoctrinate your community.
6. Discuss with your principal and superintendent school and community questions that trouble you.
7. Never criticize and rarely discuss other teachers, your administrative school officials, or the board of education with others than your very close confidants and then most cautiously.
8. Be careful at all times to avoid being thought of as belonging to a "faction."
9. Remember at all times that you may be "provincial" and that you must learn to be tolerant and understanding.

Informing the Public.—The teacher should always be alert to the possibilities of contributing to a better understanding of the work of the school. Not only should he cooperate wholeheartedly with the program of the entire school system and that of the building or school in which he is employed, but he should (keeping the principal informed all the while) initiate and carry on public relation activities on his own or together with others of his department.

Among the public relations activities employed successfully by many school departments and teachers are exhibits of the work of the students (handwork, musical performances, student discussions, plays and playlets) before service clubs and other organizations in the community, at county fairs, or in show windows downtown, and stories about the work of the students and developments in the school in local newspapers as well as in the school paper on such topics as new courses, new equipment, standard test results, special "weeks," school programs, honors awarded to the school or its representatives, assembly programs, athletic interests, special honors, and unusual achievements of individual teachers.

In news stories and in the public presentation of students or of their work it is advisable to observe certain important principles:

1. School administrators should give due credit to students and teachers.

2. Teachers should give credit to students and not monopolize the spotlight.
3. Individual students should not be praised excessively or exhibited conspicuously; keep the center of interest in the group rather than any individual.
4. Individual teachers should be careful not to overdo publicity which seems to be boastful or center too much upon themselves.
5. The teacher should learn to write for the newspapers interesting, concise copy. Editors and reporters are pressed for time and cannot spare much time for writing school news.
6. The teacher should have a definite understanding with the principal and superintendent as to what kinds of copy should have their approval before sending news items to the newspaper. In some schools all copy goes through the office of the principal or of the superintendent.

7. The Teacher and Research

Not only is the physician far more completely trained than the teacher, but with few exceptions he continues to read the results of medical research and findings in practice. There are scores of journals printed in English in which medical research is published. More than 95 per cent of the physicians and surgeons in the United States receive and most of them read fairly regularly the *Journal of the American Medical Association,* in which each week there are on the average approximately ten or a dozen articles and forty or fifty large pages of reports of medical research.

Teachers are generally not well trained in reading reports of educational research, much less in doing research. They do not possess an adequate stock of concepts and terminology in statistical and experimental methods. Many journals publishing educational research insist that the writers of the articles prepare their reports in relatively non-technical terms. There is, therefore, very little reason for any teacher not to keep abreast of the more important educational research.

Among the more useful media of publication of educational research are the following periodicals, which are here classified on the basis of the relative technicality of the reports published:

Most Technical Journals.—

1. *Journal of Experimental Education.* All fields. Department of Education, University of Wisconsin, Madison 6.
2. *Journal of Educational Psychology.* Warwick & York, Inc., Baltimore.

Somewhat Technical Journals.—

1. *Journal of Educational Research.* All fields but more articles on elementary education. Department of Education, University of Wisconsin, Madison 6.
2. *Review of Educational Research.* Summaries of the findings of researchers. Each issue is devoted to a single field, e.g., "The Language Arts." The cycle of fields is repeated each three or four years. American Research Association.
3. *Journal of Applied Psychology.* Northwestern University, Evanston, Ill.

Non-technical or Only Slightly Technical Journals.—

1. *School Review.* Secondary education. Department of Education Publications, University of Chicago, Chicago 37.
2. *Elementary School Journal.* Elementary education. Department of Education Publications, University of Chicago, Chicago 37.
3. *Educational Research Bulletin.* Ohio State University, Columbus.
4. *Journal of Educational Sociology.* New York.

Series of Monographs and Bulletins.—Many of the more complete and technical reports of research are published in the form of small books or bulletins. There are several rather important series of such publications including the following:

1. *Contributions to Education.* Principally the reports of researches conducted as doctoral studies. Teachers College, Columbia University, New York.
2. *Supplementary Educational Monographs.* University of Chicago, Chicago.
3. *Bulletin of the School of Education.* Bureau of Cooperative Research, Indiana University, Bloomington.
4. *Bulletin of the Bureau of School Service.* College of Education, University of Kentucky, Lexington.
5. *Studies in Higher Education.* Division of Educational Research, Purdue University, Lafayette, Ind.

Books.—Often an investigation is of such proportions that a book of several hundred pages or even a set of several books is necessary to report it. In these categories are:

1. *Appraising and Recording Student Progress,* by Eugene R. Smith, Ralph W. Tyler, and others. Adventure in American Education Series. Progressive Education Association. New York: Harper & Bros., 1942. Vol. III.
2. *High School and Life,* by Francis T. Spaulding. The Regents' Inquiry (New York State Survey). New York: McGraw-Hill Book Co., Inc., 1938.

3. *Mental and Physical Traits of a Thousand Gifted Children,* by Lewis Madison Terman. Stanford University, 1925. Genetic Studies of Children, Vol. I.

Some volumes contain reviews or summaries of research in a given field. For example, William S. Gray's "Summary of Reading Investigations, July 1, 1941, to June 30, 1942," was reported periodically in the *Journal of Educational Research* (Vol. XXXVI, pp. 401-444).

If teachers feel that they cannot afford to purchase personal copies of these books or subscribe to research publications they should ask the administration of their schools to buy them for the professional library which the majority of school systems now have.

Changes in Attitudes Toward Research.—Principally through the researches of Thorndike and Terman and their graduate students in the first quarter of this century many reliable and valid means of measuring intelligence and educational achievements have become available. Statistical and research methods also have become more generally understood and appreciated. As a result, not only has the amount of reliable knowledge about education procedures vastly increased, but a great body of unsound beliefs and practices based upon authoritative and dogmatic speculation has been discredited and abandoned.

Prior to these developments much research on education was of a very amateurish and unreliable nature as the result of the following types of weakness and limitations:

1. Measurements provided measures of only part of the educational results.
2. The measurements employed did not measure growth. They measured only final status and did not take into consideration status at the beginning of the experiment.
3. Non-experimental factors, e.g., intelligence, special abilities, and learning which resulted from sources outside the experimental setup, were not adequately controlled.
4. The statistical methods employed were inadequate or inappropriate.
5. The interpretations of findings were not skillful and sound.

Those well trained in research became so busy directing the research of others—chiefly candidates for master's degrees who were not competent to do research and usually not much interested in doing it—that they did little painstaking research themselves. Promotions, particularly in college faculties, came to depend largely upon the number of research articles published. A premium was placed not upon the quality of research but upon the number of published titles. Ambitious young instructors could not wait for promotion until long-term careful research investigations could be completed.

These factors contributed to a lessening of respect for and confidence in educational research. In addition many teachers were not trained to read technical research. Many others found courses in statistical and research methods difficult and distasteful. The natural tendency was for all of these groups to rationalize—to pooh-pooh research and to forget about it. In this they were aided and abetted by college teachers of education who were themselves untrained in research and statistical methods and found their positions of leadership insecure.

Still other factors operated to cause teachers to neglect research. A considerable number of teachers colleges, established and expanded in times of a greatly increasing demand for teachers, found that, as enrollments in the schools reached the saturation point, they must make these courses easier and more interesting. Statistical methods and research are not easy and are usually of interest only to the better trained and more capable. At the same time, the Progressive Education movement in many places fell into the hands of superficialists, institute and convention entertainers, and butterfly chasers. It attracted and consoled a great many of the more emotional, less intellectual, and non-scientific-minded teachers. The loose thinking of superficialists who would substitute high-sounding phrases for painstaking thinking and hard work resulted in educational bankruptcy.

More recently a counter trend of sanity has asserted itself. It has been recognized that the educational progress of young people was suffering. The war has also counteracted to some degree the national tendency to seek the cozy and soft and to avoid the rigorous. Today there is less and better research. Today there is a definite trend to the conduct of sound research and the reading and application of its findings.

Characteristics of a Good Experimental Investigation of Learning.—Teachers who have not had courses in research methods, in measurement, and in statistical methods should at their first opportunity take such courses. Until they can take courses in these fields, they should read an elementary book on each of these subjects. Three of the suitable books are mentioned on the next page.

1. Sorenson, Herbert. *Statistics in Education and Psychology.* New York: McGraw-Hill Book Co., Inc.
2. Rugg, Harold. *Primer of Graphics and Statistics for Teachers.* Boston: Houghton Mifflin Co.
3. Garrett, Henry E. *Statistics in Psychology and Education.* New York: Longmans, Green & Co.

From training in research methods, measurement, and statistical methods the teacher will learn to recognize the characteristics of a sound experimental study of learning and of teaching procedures, including the following essentials:

1. Employment of a *control* group of learners comparable to the experimental group and of the same degree and pattern of distribution of ability, educational status, and ability to learn, and of equal status with respect to the things to be learned. Comparability is usually measured by:
   (a) General intelligence test, mental age and intelligence quotient
   (b) Tests of information, skills, understandings, habits, or other outcomes to the development of which the experimental learning experience should make material contribution
   (c) Marks and ratings by former teachers
2. Control of factors, other than the method or materials being investigated, likely to influence growth of the students in the areas of the more important outcomes, e.g.:
   (a) Age
   (b) Sex
   (c) General home environment
   (d) Relative skill of the teacher or teachers, both in general and with particular respect to the experimental and control methods and materials
   (e) (Of great importance) opportunities to learn elsewhere, i.e., stimuli, outside the experimental setup, to the development of the outcomes to be measured
3. Selection, or development, and use of reliable and valid measures of growth outcomes during the experimental period (These measures should grow out of the experimental method and materials and should not be mere subject-matter information tests. Measures should be expressed in terms of units which are reasonably equal and comparable, so that growth as indicated by final and initial scores of 60 and 40 respectively will be equivalent to growth as indicated by scores of 70 and 50, or 45 and 25.)
4. Appropriate statistical treatment, e.g., determination of the statistical reliability of whatever differences are found, including the

extent to which they may be the result of unreliability of the measures of growth or chance errors of sampling (If coefficients of correlation are employed they should be appropriate, e.g., not linear for non-linear data, and they should be carefully interpreted.)

5. A painstaking and logical interpretation of the data and the findings, sufficient to pass the following tests:
   (a) Were all of the more important possible outcomes adequately measured?
   (b) Were experimental and control groups approximately equivalent in *all* of the important regards that would likely determine the amount of growth during the experimental period?
   (c) Were all non-experimental factors likely to influence growth during the experimental period eliminated or so controlled as to produce equivalent effects upon the two groups, e.g., learning from outside sources or the relative lack of experience of the teacher with the experimental methods?
   (d) To what extent could the differences discovered or the fact that no significant differences were discovered be attributed to chance?
   (e) Were the general conclusions of the study applicable alike to bright, dull, and average learners? to boys and to girls? to younger and to older learners?
   (f) To what extent could the conclusions be applied to other classes? other subjects? learners of other ages? learners in other types of communities? learners in schools employing different methods?
   (g) To what extent were the experimental results affected by attitudes of the learners or of the teachers which were not typical or permanent?

Cooperative Research.—In many of the larger cities investigations are being carried on under the leadership, planning, and direction of competent investigators. Under their direction teachers assist by cooperating in the course of their regular duties or by serving on committees or in other capacities as their training and ability qualifies them. These investigations usually deal with such subjects as (1) learning, (2) course of study development, (3) individual problem pupils, (4) construction of measuring instruments, and (5) achievement, pupil adjustment, home environment, community conditions, employment opportunities, and the like. Many of the more desirable positions in larger school systems are open only to those with training, interest, and capacity to carry on or to assist in any way in carrying on investigational or creative research.

8. Study Hall Management

Size and Location of Study Halls.—Almost every high school building has at least one room larger than a typical recitation room in which students are supposed to study when they are not in class, laboratory, or assembly or are engaged in extracurricular activities. In some schools the assembly hall, unsuited as it usually is for study, is employed for this purpose because no other room is available. In general, study halls should not be so large as to accommodate more than sixty or seventy students. In larger schools several small study halls are better than one large one.

In small schools in which not more than fifty students are likely to be in study hall at any one time, it is better to have a combined study hall and library. Johnson[1] and others have shown that in the combined study hall-library students make much more use of library books of all kinds. In larger schools study halls should be located close to if not adjacent to the library.

Equipment.—Besides seats and desks or tables very little furniture or equipment is needed in a study hall except as may be required for library purposes. If the study hall is in the library, some of the books of course should be on open shelves or on tables as should the periodicals and general reference works such as encyclopedias, dictionaries, etc.

If the study hall is not in the library, there should be tables with chairs for the use of dictionaries and encyclopedias; at least one of each should be in every study hall. It is usually best to have these in the back of the room where the student may work without attracting the attention of others and may be in the direct line of vision of the supervisor.

Purposes of Study Halls.—The study hall has but one important purpose, that implied by its name. It is a place where students may study. In order to prevent students from leaving the school or causing disorder in or around the building, and because of the necessity for supervision, the students are required to report to an appointed room fitted with suitable desks or tables and chairs and seats. The study hall is not a satisfactory place for directed study. The teacher in charge of the study hall can give only limited assistance to students in the preparation of their lessons. Several types of errors are frequently committed by teachers who attempt to assist students in study halls:

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[1] B. Lamar Johnson, *The Secondary School Library*, U. S. Office of Education Bulletin 1937, No. 17, Washington: U. S. Government Printing Office.

1. The study hall teacher gives too much help in many instances.
2. Explanations are not consistent with those given by the classroom teacher, and the students become confused and lose confidence in one or both of their teachers.
3. Teachers develop misunderstandings among themselves.

In some schools the study hall supervisor attempts to train students in skills and better habits of study. He assists them in budgeting their time and planning daily or weekly study schedules. In some schools the study hall supervisor distributes mimeographed or printed sheets containing suggestions for effective study and discusses methods of applying the suggestions with the study hall group. A more detailed discussion of study methods and skills has been presented in Chapter 9.

Suggestions for Study Hall Management.—Among suggestions which have been found to be effective in improving the management of study halls are the following:

1. Students should be required to occupy the same seat at all times.
2. A seating chart with the students' names should be prepared the first week and used (a) to check attendance and (b) to learn students' names.
3. Students should be required to bring permits from the principal's office for leaving study hall for any purpose other than to go to the library or to the washroom.
4. Students leaving the study hall for the library should be given a building pass on which the student's name and the time he left the study hall is entered by the study hall supervisor.
5. Studying together by two or more students should not be permitted except occasionally when several students are required to prepare a cooperative assignment.
6. Students absent from study hall should be required to present admits or excuses exactly as would be required for absence from a class.
7. Students should learn that each may speak briefly and quietly to another student without asking permission but that ordinarily this privilege is to be exercised not more than once or twice a week.
8. Students should be directed to bring to the study hall all the books, etc., from their lockers which they will need. Frequent delinquents in this respect must be denied the privilege of leaving the room more than once every week or so.

9. The supervisor should refrain from unnecessary talking or any other activity likely to disturb or distract any of the students. Conferences with or instructions to individual students should be carried on very quietly, usually at the student's seat.
10. Study hall groups as a whole should not be punished or lectured to because of the offenses of one individual or a small group.
11. Sometimes changing the seat of a student will solve a problem of disorder.
12. Ordinarily any group effort to disconcert the teacher should be ignored except as the teacher may be able definitely to identify the leader or a few leaders for punishment.
13. Attendance should be very carefully checked.
14. The teacher should not leave a study hall unsupervised any more than she would a regular class. (The degree of self-government by pupils and the school policy should be determining factors.)
15. If several teachers have study halls, they should cooperate in observing the same general policies.
16. Lighting and ventilation should be carefully controlled.

Honor and Student-Supervised Study Halls.—In a great many schools study halls have been operated without teacher supervision either as honor study halls or under student supervision. These have usually been reasonably successful. In a minority of instances they have been disastrous. In general it is doubtful that much is gained except the release of teachers for other duties. In many schools the majority of students are not permitted to be in honor study halls but are assigned to teacher-supervised rooms. In small schools it is not economical to have two study halls. Student-managed study halls have not been particularly effective and are employed less frequently than formerly.

Questions, Problems, and Exercises

1. Add one or more suggestions to those given for "Getting Ready for the Year and the First Day." Which ones of those given do you think are of greatest value?
2. Make a list of all the more important things a teacher should endeavor to learn about the community and where he could find each.
3. What, in your subject, could you exhibit or bring to the attention of the community as a means of helping the public appreciate the work of the schools?
4. Find at least one issue or copy of the periodicals and books mentioned in connection with research and select several good research reports of interest to you.

5. Make an abstract about 500 words long of a research report. Include objectives, techniques, sources and nature of data, findings, and conclusions.
6. List several important weaknesses found in research investigations.
7. Why are many teachers as willing to teach a class as to supervise a study hall? Which is the more work?
8. What are the principal reasons for poor study hall conditions and how would you remedy each of these conditions?
9. Can you add two or three suggestions to those given for study hall management? Which of those given are of least value?
10. What do you think of honor study halls? student-supervised study halls? Give reasons for your opinions.

Chapter 25

THE TEACHER'S PROFESSIONAL AND BUSINESS PROBLEMS

1. Getting a Position

Teaching as a profession has among others two very attractive characteristics. Except in most unusual times it is not difficult to obtain a position, and there is more than average security in one's position. In times of economic depression there is usually a surplus of teachers. However, even in such times the possibilities of getting a position are good. There is always a demand for young, well-educated teachers with good personalities.

In prosperous times there is a scarcity of teachers. During World War II a critical shortage of teachers developed, and more than 15 per cent of all teachers in this country taught on emergency certificates issued to legally unqualified persons. Doubtless there will not be until late in the 1950's enough qualified teachers to fill the demand. As the result of the greatly increased birth rate throughout the 1940's, there will be throughout the '50's and perhaps well into the '60's a greatly increased school enrollment calling for hundreds of thousands more teachers and school administrators.

Criteria for Evaluating Positions in Education.—Hence the problem is not so much one of finding *a* position as finding the best one possible. What constitutes the best one possible for any given individual depends upon a number of factors, prominent among which are the following:

1. Amount of annual salary and the pattern and maximum of the salary schedule
2. Opportunities for, and assurance of, advancement financially and otherwise
3. Cultural advantages of the community—musical, dramatic, and social
4. Mores, customs, and conventions of the community
5. Location of the community with respect to larger cities of unusual cultural and amusement opportunities

6. Quality of places available for the teacher to live
7. Quality of professional leadership in the school and the school system
8. Nature and amount of work required of the teacher—number of classes per week, extracurricular duties, etc.
9. Physical climate of the community
10. Opportunities for a satisfying social life; and for unmarried women teachers, the relative number of desirable and eligible young men in the community
11. Proximity to large and attractive school systems in which promotion may be found
12. Degree of adaptation of the subjects taught and other responsibilities to the preparation and the interests of the individual teacher
13. Requirements for promotion, e.g., summer study or travel
14. Security in position and certainty of tenure
15. Financial considerations other than salary: retirement plan, sick leave, health and hospital insurance, etc.

In applying for and in considering offers of positions, one must investigate the school and the community with respect to most of these criteria, attaching to each item a weight proportional to its importance to the individual seeking a position. Ordinarily a teacher should visit the community and the school, particularly if it is in session, before making a final decision. He should discuss the school and community with the placement bureau if he is notified of the position by a college placement agency. He should attempt to discover what one may expect in other communities in which he is likely to be considered for a position.

Avenues for Placement.—Among the avenues through which teachers find positions, those most commonly employed are:

1. The placement bureau of college or university from which he has a degree (Such bureaus usually charge a small registration fee.)
2. Commercial teacher's agencies, which usually charge a fee of 5 per cent of the first year's salary
3. Independent application to the superintendent of schools of a city in which the applicant has no other contacts
4. Independent application to the superintendent of schools in a community in which the applicant has relatives or personal friends either in or outside the school system

No matter what the avenue of approach, if the teacher really wants the position involved, he should exercise care and judgment and cooperate closely with those seeking to help him.

It is ordinarily advisable to be registered with a college placement bureau every year that one is not certain that he should or would like to remain in his present position. Usually one is notified of many desirable vacancies. The costs are small. It is better to have one's credentials, including copies of one's recommendations or "references," sent to an employing official by a third party than to have the employing official write to the individuals given as references. The latter tend to forget the applicant as years pass, or may be temporarily or permanently at some place other than the address given. One should keep his appointment bureau papers up to date, adding new references and additional data relating to his experience, education, and honors, and every few years supplying new pictures.

If the avenue is a placement bureau or agency, the following suggestions are valuable:

1. Furnish the bureau with accurate and complete information.
2. Supply the bureau with suitable photographs.
3. Follow faithfully the instructions given by the bureau.
4. Be prompt in making a written or personal application if instructed to do so.
5. Offer to call for a personal interview and visit to the community if the distance and expense involved are not great.
6. In furnishing references give names of educators, particularly those who have seen you teach, and only one or two names of ministers or personal friends or friends of the family.
7. Keep the placement bureau informed in regard to change of address and status.

Written Applications.—The following are suggestions for written applications:

1. Write in legible longhand. Typewritten letters are appropriate if they are done expertly.
2. Be careful of correctness in all details of form, e.g., punctuation, grammar, paragraphing, beginning and closing of letter. Avoid abbreviations.
3. Unless instructed to do so, do not write a long letter of great detail.
4. Unless instructed to the contrary, always address letters to the superintendent of schools, never to members of the board of education.
5. Do not write on the stationery of a college fraternity or sorority, or on colored or scented stationery. It is preferable to use unfolded plain sheets of large size.
6. If one is not registered with a placement agency, one must give complete pertinent information. Describe education in concise

form, in chronological order and under appropriate headings, as in following fictitious example:

Education:

Graduate of Moberly, Missouri, High School, 1940
Attended Central College, Fayette, Missouri, 1940-1942
Attended University of Missouri, 1942-1944; B.S. in Education, majoring in English, minoring in history
Attended University of Colorado, summers 1944 and 1945, ten weeks each, taking graduate courses in education, history and psychology

Experience:

Teacher of English and history, Littleton, Colorado, High School, 1944-46.
At present, teacher of English and girls' adviser, Greeley, Colorado, Senior High School, since 1946

Honors and evidences of leadership:

President of student body, Moberly High School
Secretary of sophomore class, Central College
Member of Kappa Delta Pi, professional and honorary fraternity, University of Missouri
Chairman of English section, Eastern division of Colorado Education Association, 1946

Extracurricular activities:

Debate and glee clubs, Moberly High School
Dramatics, University of Missouri
Coached play, Littleton High School
Taught Sunday school class, Presbyterian Church, Littleton

References:

Mr. Harry S. Jones, Principal, Moberly High School
Professor Edith Small, Central College, Department of English
Professor W. W. Sawyer, University of Missouri
Professor R. K. Whithaus, University of Missouri
Superintendent W. D. Costello, Littleton, Colorado
Principal H. S. Marigold, Greeley, Colorado, Senior High School

Age and birthplace should always be given, and usually height and weight. Religious affiliation need not be given unless requested, although it may in some instances be quite important.

In the great majority of larger school systems, blanks are available by means of which this information and other desired data may be submitted. It is usually well to write first a short exploratory letter asking for an application blank. In case no blank is available, one may choose between having a college placement bureau send one's papers or writing out the information indicated above.

The Personal Interview.—Ordinarily one's chance of obtaining a desired position is better if one has a personal interview. Most employing officials do not seriously consider any but most unusually desirable applicants without a personal interview. While a personal interview must be adapted to the particular interests, tastes, and prejudices of those concerned, there are nevertheless a few general principles which usually should be observed. Some of these are presented in the following paragraphs.

In the interview, *the applicant should permit the employing official to determine the course and scope of the interview* and to do most of the talking and questioning.

The applicant should answer fully the questions he is asked but should not consume too much time in doing so, and he should not discourse at length on matters in which the employing official has not indicated an interest for information. Excessive verbosity and aggressive salesmanship are usually detrimental.

The applicant should be at ease, pleasant, relaxed, not too forward, confident but not egotistic, and at least reasonably natural.

The applicant should rarely if ever "play up" to the employing official or to what he has been told are his pet "ideas." If anything is done in this direction it should be done most skillfully and quite subtly. The applicant should not agree too enthusiastically with the employing official and certainly should not argue with him. If he feels that the employing official is taking a stand he does not believe in for the purpose of drawing out the applicant—which sometimes happens—the latter had better express a mild doubt or let it pass.

If the applicant is asked his opinion on a matter, he should be frank and honest, somewhat conservative, and not too positive in regard to matters about which he is not absolutely sure of his opinion.

The applicant should in a modest way ask for information about the position, the school, its philosophy, its organization, the community, opportunities for advancement, etc. He should have thought through in advance just what information he wants most. His requests for information should come late in the interview. Only if the employing official is obviously attempting to persuade the applicant to accept the position can the applicant seem to be the one to be pleased. Nevertheless, not only should the applicant obtain the important matters of information from some source, but intelligent questions indicating also professional interest and orientation, if not overdone, are likely to put the applicant in a favorable light.

The applicant should study carefully what would be the most appropriate attire and toilet, realizing that while attractiveness is important, there is great variation in the tastes of employing officers and of communities with respect to teachers.

2. Getting a Better Position

Suggestions for Getting Better Positions.—Ordinarily it is desirable and fair to the school and its students for a teacher to stay in a position at least two years and to leave only if a definitely better position is offered or if his work is not proving reasonably successful. There is much waste incident to changing positions. In the first year in a new position, the teacher is somewhat at a disadvantage by reason of his lack of knowledge of the students and of the philosophy and conventions of the school and community. He is "learning the business" to some extent. Unless an unusual opportunity presents itself, he is almost compelled by professional ethics to stay a second year, if desired.

From the point of view of the teacher's interest he should not move too often. Employing officials are usually suspicious of applications from individuals who have moved from school to school with only a year or two in each place unless there is definite evidence of a good promotion with each move. Then, too, there is always the risk that for some reason or other, or for no reason at all, the teacher may not be as successful in the new position or may not like his new community as well.

Agencies and Avenues.—When he decides it is time to seek a better position he should canvass the agencies and avenues available. Prominent among those are:

1. His college placement bureau
2. A placement bureau operated by the state education association
3. If he desires location a considerable distance from his own state, a commercial agency in the region to which he wishes to go
4. Application to superintendents of schools in systems of a size to which he can reasonably aspire, and in regions where he wishes to live (Directories containing the names of superintendents of schools may be obtained at low cost from the U. S. Office of Education in Washington and from the offices of state superintendents of schools.)

His chances of success are improved if the applicant attends and takes part in county institutes, state conventions, and meetings of teachers of his field; if he belongs to his state educational association; and if he reads several professional journals, thus keeping up with trends in educational thinking and practice. His chances of getting a good position are also increased if he has written articles for publication in professional periodicals or if he has attended summer school at a well-recognized college or university. Naturally, his chances for promotion are increased, particularly for administrative positions, if he has a master's degree in his chosen field of work.

References.—In the case of the experienced teacher, the quality of his experience is the most important factor in his getting a better position. Obviously then he should have avoided all unnecessary conflicts with his principal and superintendent and all criticism of them and the school. He should have developed as far as possible the good will and respect of as many students and members of the community as possible. If he has a record of intelligent, effective cooperation, he is in a fortunate position.

Some of the people by whom he must be considered for a better position will be greatly interested in his references and their statements in regard to the quality of his work. He should first inform those from whom he must get references that while he is happy in his present work he naturally would like to get a promotion from time to time and that he would be most appreciative of anything that is done for him. He should discover whether the principal or other potential reference thinks highly of his work and whether he would be willing to have his name used as reference. Perhaps too, he should ask his advice and help in getting a better position. If there is any doubt about the willingness of the person to whom he would refer to give him a very favorable recommendation, he should not list that individual's name.

Locating Lucrative Positions.—Relatively well-paid positions are to be found in large numbers in certain places by people properly qualified. Higher salaries are usually found in the cities than in smaller places and in the wealthier states (New York, California, Pennsylvania, Connecticut, Massachusetts, Ohio, Illinois) than in the less prosperous ones. To obtain positions in these places, the teacher should make application before he is past 35 years of age One must get "in" fairly young and be promoted within the system. That means making good in the first six or eight years of teaching and improving oneself professionally by reading, experimentation, hard work, self-analysis, and attendance at summer schools at least until the master's degree is attained.

The teacher should not forget that extra-classroom activities and contacts are very important. He should be liked and respected by the people of the community in which he is living and he should be a valuable citizen in it.

The teacher who wishes to get ahead should think of the possibilities of specialized service as a supervisor, counselor, psychologist, or the like. The men should think of administrative positions if suited to that kind of work. Most men of good minds and fair personalities make successful administrators in spite of their original doubts about this type of position and should prepare themselves for a principalship or superintendency. There are also thousands of positions in teaching and administration with manufacturing and sales concerns of all sorts, including book companies. There are more than 100,000 positions in colleges and teachers colleges. For most of these a doctor's degree is a prerequisite.

3. Contracts and Security

Permanent Tenure.—With respect to the security one has in one's position there are three principal categories of positions: (1) those covered by permanent tenure, (2) those involving continuing contracts, and (3) those under ordinary teaching contracts. The greatest security is in those places in which what is called permanent tenure is in effect. The typical tenure law provides that after a period of three years from the time when the teacher has entered the service of the school district, he may not be discharged without cause and without a hearing or trial, if he demands it. In many districts the causes for dismissal are named. Usually they include immorality, incompetence, and insubordination.

Permanent tenure provisions were sought eagerly by teachers' organizations for the purpose of insuring teachers against fear of dismissal for political reasons or because of prejudices on the part of superior officers, or members of the board of education, or because of pressures from influential individuals or groups seeking the dismissal of teachers for reasons other than their relative professional competence. In operation, permanent tenure, together with mechanical salary scales which do not recognize merit but guarantee all teachers automatic salary increases at stated intervals, has operated in the case of too many teachers to remove incentive for growth and for rendering a high quality of professional service.

The bad effects of permanent tenure have become increasingly great in recent years. Because of the decrease in the numbers enrolled in teacher education schools and the increased tendency for teachers to remain in teaching, many schools have become saturated with older teachers who are in poor health, have suffered a weakening of mental powers and personality, and show little interest in keeping up professionally. While it is desirable that these older people (and not all of them are superannuated) be employed at something and enabled to earn a living, it is a tragedy that they be imposed upon youngsters in the schools with all the ill effects that are certain to result from their close association with, and domination by, relatively incompetent teachers whose personalities are deteriorated by bad health and poor mental hygiene.

Bad Effects of Insecurity.—On the other hand, unless there is some very definite assurance of tenure, the retention of teachers will tend to be on the basis of their political affiliations and activities and their personal connections. These conditions exist today in many places where there is no permanent tenure. Likewise, in schools where there is no provision for tenure, the schools and the students are subject to pressure groups who wish to influence what is taught in the schools for their particular purposes and to the whims and prejudices—religious, personal, and otherwise—of school board members, influential members of communities and not infrequently of school administrators. It is clear that schools, teachers, and pupils must be protected from such influences.

While only a minority of teachers are dismissed unjustly or illegally, there can be no doubt that the great majority of teachers are influenced a little, many a great deal, in deciding what and how to teach by the fear of offending ignorant or selfish people or groups in the community. Topics of great educational value, e.g., sex education, government management of business, labor-management problems, and others are either dodged entirely or taught with a "lick and a promise" by many timid teachers—and teachers are generally and notoriously timid, conservative, and cautious in their professional work. If the schools are to render anything like their maximum service in education for intelligent democracy, these restrictions must be at least relaxed if they cannot be entirely removed.

The Continuing Contract.—In recent years the "continuing contract" has been gaining ground both in theory and in practice as a substitute for permanent tenure. The continuing contract now required by law in some states and employed voluntarily by an increasing number of districts possesses the following characteristics:

1. After a probationary period, usually two or three years, the teacher is on indefinite tenure until dismissed by a majority vote of the members of the board.
2. Official notice of dismissal in writing must be given the teacher, if he is not to be retained, not later than a specified date in the spring, usually a designated date in April.
3. The teacher is entitled to be informed of the reasons for his dismissal and, if he demands it, to a prompt hearing before the board.

The continuing contract has several very important advantages. They may be summarized as follows:

1. The teacher is not required to seek reappointment annually.
2. Dismissal requires a positive action by a majority of the members of the board—not merely a majority of those present at a meeting.
3. The teacher may require a hearing and a statement of the reasons for his dismissal.
4. The teacher must be notified in time so that he may have a good chance to obtain another position.
5. The teacher must be notified before he leaves the community at the end of the school year and may confer with the administrative officers and members of the board before the end of the year and may inform members of the community, thereby preventing the board from keeping the news of the dismissal from the community to which it should be responsible.
6. It does not require the board to prove incompetence, immorality, or any other legal cause for dismissal and hence does not operate to insure permanent tenure. It does make dismissal more difficult than under the annual contract plan and guarantees better conditions of dismissal.

Many administrators object to one feature of the plan, namely that the requirement of early notice may give the dismissed teacher an opportunity to stir up in the community opposition to the board's action of dismissal and that he may from the time of the notice of dismissal be a liability rather than an asset to the school. In practice this objection has not proven in a great many cases to be a serious one. The dismissed teacher usually does not wish to advertise the reasons for his dismissal and is usually wise enough not to behave in a manner so unprofessional as to handicap himself in obtaining another position.

The Teacher's Contract.—The contract between teacher and board of education should specify clearly (1) either the annual salary to be paid or the monthly salary to be paid for a specified number of months in the year, and (2) the general nature of the duties to be discharged, e.g., as a teacher in an elementary school, as an elementary school principal, as a teacher in a high school teaching principally English and mathematics. All other provisions, such as requirements to swear loyalty to the Constitution, or to refrain from teaching certain doctrines, should be looked upon with great suspicion, as should provisions relative to community duties, place of living, membership in organizations, or any restriction of any type on the full rights and privileges of a free citizen.

A teacher's contract is a legal agreement equally binding upon both parties. In recent years the practice has grown among teachers of requesting release from a contract in order to accept a better position. School boards have rather generally released teachers from their contracts under such conditions. While in many instances this has not been in the interest of the schools represented by the boards, they have felt that they do not wish to go to the expense and trouble of bringing suit for the enforcement of the contract. At best they could retain for probably not more than a year the services of an unwilling teacher.

It seems unethical for a teacher to refuse to fulfill his contract if the board is not willing to release him, particularly if it is near the beginning of the school term and the chances of employing a competent teacher are not good. The very fact that the teacher has been given the security inherent in a contract is a benefit to be taken into consideration. The employing officer who induces a teacher to break his contract with another employer not only is likely to obtain a teacher of questionable reliability, character, and sense of responsibility, but is also legally liable for inducing a breach of contract.

4. Academic Freedom

The Right to Teach the Truth.—As suggested earlier in this book, teachers must insist upon the right and opportunity to discharge their responsibility to society and to their students in the highest professional manner. Just as no reputable physician or surgeon will countenance any restriction of his privilege to practice on the highest professional scale and with full professional freedom, so must teachers insist upon being permitted to teach the truth, nothing but the truth, and all the truth that needs to be taught. They should stand shoulder to shoulder in a determination not to permit the schools to become prostituted.

The idea existing in the minds of many that the teacher is "hired" to teach as the local board or community wants him to is fallacious. It is true that the board has the legal right to decide what departments shall be established and what subjects shall be taught, but most boards are wise enough not to exercise that legal right independent of the recommendations of the professional staff headed by the superintendent of schools. Certainly no one but teachers should make decisions relative to the details of what shall be taught. This is not the responsibility of the board or of any other individual or group of individuals outside of the school staff.

To insist upon academic freedom does not mean that every opportunity must be seized to offend prudish, provincial, ignorant or biased people. It does not mean that compromises on minor matters should not be made nor strategy employed which may mean temporary minor sacrifices in order to achieve long-term major objectives. As far as possible, one should work with a community rather than against it. Nevertheless, leadership by teachers is highly important and highly necessary. The community must be educated to the need for academic freedom.

While boards of education and superintendents are employing agents, the school is an institution for society, and the state is the real authority, behind which are the people of the state. The superintendent or board of education has no legal, ethical, or professional right to insist upon the coloring of the teacher's instruction to fit any particular political, social, religious, or other philosophy and opinions.

Statements of National Leaders.—The quotations in the following paragraphs are representative of the thinking and ideals of the leaders in American education in regard to academic freedom.

> No informed person will question the healthy and wholesome Americanism of the late Mr. Justice Holmes. He pled like "an angel trumpet-tongued" for toleration of difference of opinion. He said, "If there is any principle of the Constitution that more imperatively calls for attachment than any other, it is the principle of free thought—not free thought for those who agree with us but freedom for the thought that we hate."
>
> It follows naturally because of our Americanism, that we are opposed to the hypocrisy of un-American behavior in the name of Americanism. It is un-American to suppress speech, assembly, or thinking. It is un-American to curtail privileges of citizenship, of government, or of opportunity to improve government or society. We have so much faith in America that we are not

afraid to have our democratic form of government tested against any other form of government in the world. As Thomas Jefferson affirmed in his first inaugural address, so do we reaffirm that "Error of opinion may be tolerated where reason is left free to combat it." [1]

The National Education Association from time to time reaffirms its position with reference to freedom of teaching and full opportunity to present different points of view on any and all controversial questions. "Suppression of such freedom inevitably leads to violent and reckless changes in the social order. . . . Freedom of teaching implies presentation of facts on all sides, with interpretations."

The association reaffirms its condemnation of the passage of special loyalty oath bills by state legislatures and will offer every possible assistance to prevent the passage of such bills.

Teachers must not be intimidated by administrators, boards of education, or pressure groups.[2]

The following loyalty oath for teachers was suggested by William McAndrew, former Superintendent of Schools in Chicago, at the meeting of the Department of Superintendence of the N.E.A. in St. Louis:

"I swear to defend the equal rights of citizens to life, liberty, and the pursuit of happiness.

"I swear in accordance with American right and duty to favor a change in government when government fails to secure these rights.

"I swear that I will aid teachers to secure for the people of this nation a more perfect union, justice, domestic tranquillity, general welfare, and the blessings of liberty.

"I swear in accordance with the promise of our Constitution that I shall resist all efforts to abridge the privileges or immunities of citizens of the United States, including teachers.

"In furtherance of this, my solemn oath, I pledge my life, my fortune, and my sacred honor." [3]

Many of the greatest and most valuable contributions to human knowledge have been made by men who were threatened, persecuted, and in some instances killed by provincial, ignorant, bigoted, and selfish people of their times. These men include Socrates, the father of modern science and philosophy; Copernicus and Galileo, who made the greatest contributions to astronomy; and Pasteur, who discovered bacteria as a cause of disease and was persecuted almost universally by the physicians of his time. All through the ages thousands of men and women of high ideals, educators and others, have fought steadfastly for the right of the people to know the truth, the right of all to seek the truth, and the right of teachers to teach what they believe to be the truth and to discuss controversial questions. The ignorance and prejudice of the masses and the persecution and inquisition of the vested interests, including royalty and the church, have never succeeded in stopping the march of the minds of men in their quest for truth and freedom.

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[1] "Teachers' Oaths and Academic Freedom," President Daniel L. March in annual report to the Trustees of Boston University.

[2] John H. Lloyd, "Education Conventions," *School Life*, XXII, 11.

[3] *The Education Digest*, II, 21.

Recent Trends.—Much progress in the direction of academic freedom has been made. A little more than a century ago members of the school board at Lancaster, Ohio, thought it inappropriate to discuss in a schoolhouse such questions as whether the railroad was practical or not. They said, "You are welcome to use the schoolhouse to debate all proper questions in, but such things as railroads are impossibilities and rank infidelity. There is nothing in the Word of God about them. If God had designed that His intelligent creatures should travel at the frightful speed of fifteen miles an hour, by steam, He would have clearly foretold it through His holy prophets. It is a device of Satan to lead immortal souls down to Hell."

In the past few years the problem has become more critical. Powerful organizations, principally business corporations and their associates, have, in the opinion of the authors, become more and more fearful of the results of impartial presentation of all of the facts. Even with control of most of the press and radio, because of practices inimical to the public welfare and standard of living of the common people they have become more and more insecure. They also have become more and more conscious of the importance of the means of education. They have sought in many places to obtain control of colleges and universities—dismissing presidents and faculty members in some instances. In the State of Texas, this movement has assumed startlingly large proportions. In one city in that state in one evening a fund of $200,000 was raised to be spent in an effort to control what the schools would teach.

Likewise, educators and defenders of free speech and academic freedom have become aroused. Teachers everywhere have been rallying to the support of their leaders. Even superintendents, who in general work in close harmony with boards of education as their executive officers, have in large numbers given support to the defense of academic freedom.

Academic Freedom: a Responsibility as Well as a Right.—Academic freedom is a right, but it is a right to be earned. It is not only a privilege but a responsibility. Academic freedom does not mean the right of any teacher to teach any materials he may choose. In the first place the teacher's right to teach extends only to materials and fields in which he is expert. The more controversial the area or question, the more expert and well informed the teacher should be to enter upon it. It also should go without saying that the teacher should not include in his teaching materials and questions, particularly if controversial, which do not logically belong there. They should not be "dragged in" and should not constitute a digression.

Thirdly, and of most importance, the teacher should be most careful not to attempt to indoctrinate young people relative to controversial issues. Whatever opinions he may think fair and wise to express should be definitely and avowedly offered as opinions and wherever possible the opposing opinions should also be presented. This does not mean both or all sides of all questions need to be presented, including questions upon which there is fundamental agreement in the community, state and nation. In addition wherever possible the discussions of controversial questions should be steered clear of emotional relationships. The use of "fighting words," slogans, and labels should be avoided. It is not a good time to discuss a problem or issue just when the community is engaged in an emotional struggle or debate on the issue. It is well to avoid using of names of highly partisan people and quoting them. Emotional debates in class should be discouraged.

Nothing in the foregoing should be construed as implying that controversial questions should not be discussed. It is one of the very important functions of schools to see that youngsters grow up thinking about controversial questions, gaining insight into them and learning how to think clearly about controversial issues. Many of the most important materials of education are not factual or of the nature of exact answers. They are instead materials for training future citizens to make intelligent judgments about questions the true answers to which can never be made with scientific exactness.

Furthermore, the teacher must use considerable tact and good judgment. The extent to which a teacher can go in discussing controversial matters will depend, for one thing, upon the degree to which he has established himself in the community and with friends and acquaintances as one who is (1) reliable and not too partisan and prejudiced, (2) well informed in the field in which the controversial matter lies, and (3) possessed of stability of character and good judgment.

5. Economic Problems

Savings and Insurance.—The need of a teacher to save money will vary with the individual, as the ability to save will depend upon his income and necessary expenses. Without doubt, however, a teacher should save something from every month's salary. The beginning teacher must learn that nine months' salary will have to cover twelve months' expenses and that ordinarily at least a third of each month's salary must be saved. In addition other savings must be begun early: savings for further education, for marriage, for children to come, for insurance against illness and accident, and for retirement.

Since illness or accident may come at any time, the wise teacher will purchase health and accident insurance at the beginning of his professional career. If that type of insurance is available through the state association of teachers, it is most likely to be safe and the cheapest obtainable. If not, he should investigate the possibility of group insurance in the local school system. If neither of these is available, he should investigate other possibilities, deciding finally upon a company which is large enough to be safe and which gives low rates to teachers. A teacher is a preferred risk with respect to accident insurance.

Whether or not the teacher needs life insurance depends upon whether he has dependents for whom he wishes to provide. Despite the sales argument that anyone should take out life insurance while he is young because the rate is lowest then, there is not in the authors' opinion any need for life insurance until one has a dependent, and the amount paid for protection until that time is in large part an unnecessary expense. If life insurance is available through the state or local education association, it is most likely to be the most economical form he can buy.

Retirement.—Almost every state has some form of provision for teachers' pensions or retirement allowances. Whether or not the state or the local school district contributes to the fund, it is with rare exceptions the best plan for retirement available to the teacher. Only under unusual circumstances can a teacher afford not to participate in whatever state or local plan is available. In such plans there is no expense for advertising, salesmen's commissions, or other similar costs, and this usually effects a saving of from 10 to 15 per cent of all that is paid in in the form of premiums.

In some state teacher retirement plans, there is a provision that teachers leaving the state forfeit what has been paid in. This provision, which exists only in a few states, should deter a teacher who thinks there is considerable possibility that he may leave the state. For those who remain in the state the plan is advantageous.

The teacher may combine provisions for retirement with his life insurance by taking out the type of policy which is referred to as an endowment policy. By its terms the amount of the insurance is paid in full to the insured at the end of a given period, e.g., thirty years, if he is alive or to his beneficiaries if he dies before that time. The premiums for such endowment insurance are higher than for ordinary life insurance.

"Annuity" policies for old age should be considered carefully especially when the teacher is able to save more than a minimum amount. The annuity agreement provides for the payment of a set sum per month from the time of arrival at an age stated in the policy, e.g., 65 years, until death. A teacher paying in ten dollars a month from the age of 25 should be able at present interest rates to receive approximately $100 a month from the age of 65 until death.

Investments.—Rarely should teachers make investments other than in real estate, insurance, annuities, or government, municipal, or other high-grade bonds. Not until the teacher is wealthy enough not to be badly hurt by material losses should he buy stocks or ordinary commercial bonds. Unless he has money which he can afford to lose, he should not yield to the temptation to profit by increase in the value of stocks or by the prospect of high rates of dividends or interest. On the whole to all but those who are in a special position to know what and when to sell and buy, the losses over a period definitely exceed the gains from owning any securities except high-grade low-return bonds and the very safest of stocks. Like slot machines and all other instruments of chance, speculative stocks pay to the amateur investor much less than he pays for them.

Teachers should also be especially wary of loans to relatives, friends, or anyone else and of acting as guarantors of notes. A high percentage of such transactions end in losses and broken friendships. A policy of no loans, established early and adhered to strictly, is not only wise but enables one to say "no" without embarrassment.

The teacher should avoid borrowing as long as possible. If absolutely compelled by unfortunate circumstances to borrow, the teacher should always calculate the rate of interest on the loan. A legitimate maximum rate of interest is 6 per cent. Loan companies usually charge 15, 20, and frequently as high as 30 per cent. The best place to borrow is a local bank where one is known. If one is unable to borrow there, it would be better usually to do the best one can without borrowing.

Other Sources of Income.—Because of the low salaries in many places and the fact that teachers are free during Saturdays, late weekday afternoons and evenings, and in the summer months, many teachers seek additional employment and some invest in business enterprises. For teachers of inadequate education or of inferior teaching ability there is no alternative. For most others, their spare time would be better spent in additional education, in reading and study, or in other preparation for the performance of better professional service from day to day, thereby building toward a better position and a larger salary. This is particularly true with respect to employment during the school year and during the summer until the master's degree is obtained.

After the master's degree is obtained, summer employment may in many cases be a professional asset, particularly in the case of teachers of business or of other vocational subjects if their employment is in the field of their teaching. Employment of many types serves to orient "ivory tower" teachers with respect to the problems of the laboring and business world, and the association with adults in industry serves to offset the teacher-pupil life in the schoolroom.

Buying.—Installment buying is in reality buying and borrowing in one and the same transaction. Usually handling charges and the rates of interest on unpaid balances are high. They must naturally be high to cover costs of collection and bookkeeping and to cover the losses on bad accounts. The smart teacher, in view of the low level of teaching salaries, makes certain that his money goes as far as possible, and this excludes installment buying.

The teacher must learn early a few simple things about the business he patronizes. In all but large cities he should patronize local merchants for the great part of his purchases, just as most others in the community do and for the same reasons. The teacher's salary comes from taxes paid largely by the commercial interests of the district, and his civic spirit is judged by his community loyalty. The esteem with which he is held, in villages and small cities is in some proportion to the degree to which he is a good customer. He should, therefore, distribute his patronage wisely, and principally among local merchants, for the goods and services he needs.

QUESTIONS, PROBLEMS, AND EXERCISES

1. What are the effects of a depression upon opportunities for positions in schools?
2. Select a community in which you would like to teach and rate the community on the points usually considered in judging a community.
3. If you were to register with a teachers' employment bureau, what five people would you give as references? Why that five?
4. Write a letter of application for a position in a near-by school system.
5. Add two suggestions to the list in this chapter for consideration by an applicant in an interview when applying for a position.
6. What are the points usually covered in a teacher's contract?
7. Compare the continuing contract with permanent tenure from the point of view of the teacher and from the point of view of the school.
8. Why should a teacher have freedom from interference in regard to what he teaches? What is the teacher's responsibility in the matter?
9. What is a loyalty oath? Why do some legislators occasionally try to get a law passed requiring a loyalty oath? Why do teachers usually resent the attempt?
10. What organizations in a community are most likely to interfere in the curriculum of the schools and why?
11. For a teacher on a salary of $2600 a year with one dependent, what would constitute a good program of insurance and saving? If he has no dependents, in what respects would the program be different?
12. What are the principal arguments for and against a teacher's taking non-school employment in the summertime?

Chapter 26

IN-SERVICE EDUCATION OF TEACHERS

1. THE NEED FOR CONTINUED TEACHER GROWTH

When a certain level of teaching competence is attained, continuous effort is necessary to maintain that standard. It cannot be permanently established at a fixed point on a finite scale. Teaching competence can be represented only by a continuum of personal and professional teacher growth. Aware of both the need and the opportunity for continuous education, the conscientious teacher remains a student of the problems of teaching throughout his career. In no other profession is it quite so imperative that he continue his education after he enters upon his professional work as in teaching. The main reasons for the need of in-service education may be stated as follows:

Inadequate Pre-Service Education of Teachers.—In spite of the improvements in teacher education programs, little more than the basis for effective teaching can usually be acquired in the few years of college and professional school. The general principles of teaching appear very remote and obscure to the prospective teacher compared with the challenging daily problems of actual teaching. The impact of responsibility makes the problems of teaching appear in terms of what to do next. This deficiency in relation of immediate problems to principles is observable in both general and professional education. If the essentials in these two areas could be provided at the pre-service level, there would still be the need for blending and fusing general education, more advanced knowledge in a special teaching field, and professional education into a total pattern for teaching purposes. This synthesis can occur only in an actual teaching situation.

New Developments in All Fields of Human Knowledge.—The impact upon youth of new developments in knowledge is far-reaching and significant. If the high school teacher is to assist his students in making satisfactory adjustments to the dynamic world in which they live, he must "keep abreast" of the important developments in his teaching field.

New Developments in Education and Psychology.—Through *experimentation and research improved methods of teaching* are constantly evolving. Our basic concepts of the functions of education in a democracy are also being modified. The effective use of new instructional materials, such as audio-visual aids, requires significant modification in teaching procedures. A program of continuous study in which teaching procedures are re-examined and reinterpreted in the light of new conditions is essential.

The Changing Status of Youth in Our Society.—While many of the problems of youth are persistent and recurring from one generation to another, certain ones are thrown into sharp relief in periods of economic depression and war. The increasing proportion of older persons in our population, accompanied by greater demands for the appropriation of public funds for their welfare, has decreased the relative emphasis upon youth welfare programs. Recent developments in industry and the professions have tended to prolong the period of economic dependence of youth upon their parents. Only teachers who are alert to these trends can serve as intelligent teachers of youth whose lives and vocations are affected by these conditions.

New Patterns of Thought Demanded by the New Age.—Children must be educated not so much for the present as for the future. Teachers must not continue to educate as Bernard Shaw says schools do—"driving the tacks where the carpet was last year." We live in an age in which the people of one nation must know the condition, problems, and current history of other countries. The pace of change is increasingly accelerated. There is no place in a modern school in our American democracy for schoolteachers whom the world has left behind to take refuge with the children in an artificially simple and detached schoolroom life.

The Necessity for Continual Growth of All Living Organisms.—The maintenance of a wholesome intellectual life is dependent upon continuous intellectual growth. This is one aspect of the universal law of growth. It applies particularly to teachers. Aside from his professional obligation to provide students with the opportunity "to drink from a running fountain of knowledge rather than a stagnant pool," the high school teacher is impelled by considerations of personal integrity and status to remain a student throughout his life.

A recent survey [1] of the opinions of teachers revealed that, on the basis of their teaching experience, they believe there were many inadequacies in both their general college and their professional preparation. Ranking high on the list of topics which were in their opinion given inadequate treatment in college were intercultural relations, problems of American economic structure, propaganda analysis, and critical thinking about world and domestic affairs.

In order of rank of inadequacy, the high school teachers listed factors in professional education as follows:

1. Teacher salary schedules
2. Use of visual aids
3. Counseling and guidance
4. Diagnosis of the difficulty of nonachieving pupils
5. Teacher tenure, disability provisions, and retirement
6. Principles of mental hygiene applied to discipline
7. Current issues and problems in professional education
8. Teaching for motivation in life relationships

The significance of continuous personal and professional growth of teachers has long been recognized. The most effective methods of promoting such growth have not been so easy to discern. The teachers' institute represents the earliest form of organized effort to aid teacher growth in service. Programs of highly formalized supervision designed to stimulate improvement of instruction were introduced in American schools in the years following the establishment of the position of superintendent of schools in 1837. The summer school for teachers was established in a few colleges at about the beginning of the present century. Summer schools were developed on a tremendous scale in the years following World War I and represent a popular form of in-service education.

As a result of the growing awareness that teacher learning, like pupil learning, involves inner motivation and self-activity, individual groups of teachers within school systems have assumed responsibility for their own continued education. Administrative and supervisory officers have accepted the role of technical advisers and consultants to teachers in their cooperative and individual efforts toward self-improvement. In the descriptions which follow of the opportunities offered in the modern school for in-service education of teachers, it should be kept in mind that the mere presence of opportunities does not guarantee that effective professional growth will result. The opportunity must be accompanied by a genuine desire on the part of teachers to improve their effectiveness, as well as proper recognition of teachers' efforts in this regard by school administrative and supervisory officials.

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[1] Wesley E. Peik, *The Teaching Staff and Postwar Education in Red Wing*, pp. 20-32.

2. Types of In-Service Education

Teacher growth in service can be promoted by (1) participation in cooperative endeavors with other teachers and (2) individual teacher effort. An adequate in-service education program usually includes both types of activities. While many aspects of personal and professional growth can best be provided for by sharing in group undertakings, there are many phases of the program in which it is advantageous to employ procedures which are individualistic in nature. The relative value of the two elements of the program depends upon the needs of individual teachers. Those teachers who have limited experience in working with other people may derive greater benefit from group enterprises, whereas other teachers may need the opportunity to work at some task requiring individual thought and effort. In most instances, the individual teacher who is desirous of continuing his growth in service will find it advantageous to include both cooperative and individual projects in his program.

The high school teacher is afforded numerous opportunities for both types of learning experiences. Among the most effective activities are:

Characteristically Cooperative Enterprises

- Faculty and staff meetings
- Teacher councils
- Study groups
- Workshops
- Demonstration centers
- Study clinics
- Planning school buildings
- Orientation of new teachers
- Group excursions in community
- Planned visitation and observation
- Teacher committee work

Characteristically Individual Endeavors

- Authorship
- College work
- Reading
- Research and experimentation
- Travel
- Interschool and intraschool visitation and observation
- Educational addresses
- Membership and participation in organizations
- Self-evaluation

Essentials of Cooperative In-Service Education.—A cooperative program of in-service education of teachers serves the purpose of vitalizing the work of the school, as well as promoting teacher growth. The two functions are interdependent. In this chapter, however, the teacher-education aspect of the program will be emphasized. The effectiveness of cooperation programs of in-service education is closely related to their democratic elements.

As a member of a group of teachers engaged in study of a problem vital to the school, the individual teacher is presented with an excellent opportunity for personal and professional growth. As a participating member of such a group, the teacher has the responsibility for assisting in the promotion and maintenance of conditions conducive to cooperative democratic endeavor.

In a cooperative endeavor each member of the group has the responsibility of identifying and suggesting significant problems for study by the group. These problems should have their origins in the group situation and be of such a nature as can be solved by group endeavor. The decision to attack a suggested problem must be made by the group. The only compulsion upon members to participate is provided by the challenge of the problem. In the work and deliberations of the group the individual teacher should exercise his influence in maintaining, at all times, conditions which foster free and impartial inquiry. The individual teacher is expected to participate with the group in taking appropriate action to implement the decisions of the group.

Teachers' Meetings.—The chief value of the general teachers' meeting to the individual teacher is that of providing a general orientation to the broad aspects of the educational program of the school system. This purpose is achieved by familiarizing the teacher with the general objectives and policies of the system of which he is a part. Problems which are specific in nature can best be solved in meetings of smaller groups, such as the faculty of a particular school, or in conferences with administrative and supervisory officials.

In many schools teachers are expected to serve on committees which have the responsibility for planning and conducting teachers' meetings.

The following list of topics illustrates the type of problems upon which teachers have made a cooperative attack in their faculty meetings:

Problems of adolescence
Directed study
Individual differences
The general scope of the curriculum
Evaluation of pupil achievement
Guidance responsibilities of teachers

Teacher Councils.—Central organizations comprised of representatives of classroom teachers, administrative and supervisory staffs, and special-service personnel have been formed in several school systems. Their general purpose is to receive suggestions and opinions of other teachers in regard to different school problems, and convey constructive proposals to the superintendent and board of education. In some instances problems are referred to the council by the superintendent for study and recommendation. The council may also serve as a coordinating and unifying agency by reviewing the reports of various committees of teachers.

From the viewpoint of in-service education, obviously the greatest values accrue to the teachers who have the opportunity to serve as members of the council. However, the opportunity provided by this type of organization for all teachers in a school system to give expression to their ideas on school policies, as well as to be the beneficiaries of any constructive action growing out of the council's recommendations, serves to create a favorable environment for teacher growth.

Study Groups.—There has been an increasing tendency for teachers within a school to form informal groups for the study of a single problem or a series of problems which appear to be pressing for solution in their school. The composition of the study group depends upon the outcomes sought. Teachers with similar professional duties may consider instructional problems within a particular area of the curriculum. For example, the teachers of social studies may wish to study curricular materials and teaching procedures suitable for use in that field. A problem common to persons in different types of schools may be the basis for membership and participation in a study group. For example, representatives of junior high schools, senior high schools, and junior colleges may come together to study the problem of articulation of the schools they represent.

Members of the school personnel charged with the responsibility of achieving a common objective in an educational program may form a study group to consider their common task. For example, physical education teachers, school health service representatives, biology teachers, and school cafeteria managers may study means of coordinating and strengthening the student health program.

Study groups may be formed by teachers with similar viewpoints on a particular issue for the purpose of devising methods of arousing the interest of other teachers or persons in the matter, or a study group may seek to promote action along the lines of their interests.

A modified form of study group is the teachers' book club. Ten or twelve teachers each purchase a professional or non-professional book. The books are distributed to the members by a rotation system, each member retaining a book for a period of one month and then passing it along to another member. The members of the book club may hold meetings periodically for the purpose of discussing the various books.

Aside from its possible value in improving school practice in a particular area, the study group may serve to demonstrate to teachers the democratic way of accomplishing a task. The stimulus of the group, the informality of the organization, and the flexibility of the procedures are conducive to understanding, initiative, and leadership on the part of the individual teacher. Participation in group activities on this basis also tends to promote feelings of comradeship among teachers, as well as a sense of belonging on the part of the individual teacher.

Workshops.—No recent development in the in-service education of teachers has attracted more widespread interest than the workshop. The distinctive aspect of the workshop is the opportunity afforded individual teachers and groups of teachers to study the problems which most directly concern them under the most favorable and democratic conditions without regard to conventional class organization and procedures.

Workshops have been conducted under the auspices of various organizations and agencies, as follows:

1. Sponsored by colleges, usually in the summer, for individual teachers from different schools, or for groups of teachers from one school (In some instances, colleges have conducted extension classes in the form of workshops during the regular school year.)
2. Conducted by public school systems for teachers in the system (These workshops may include teachers with a special problem or interest, or they may include all the teachers in the system. These may be conducted in the summer or during the school term.)
3. Directed under the joint sponsorship of a college and a public school system
4. Co-sponsorship of a school system and a national organization interested in the education of teachers

Organization of Workshops.—A staff, consisting of a director and a group of consultants representing different fields of interest, is usually selected to direct the general activities of the workshop.

The actual plans are made by a committee of teachers, staff members, and representatives of the sponsoring agencies. These plans are based upon information obtained in advance from the prospective members of the workshop. The members organize themselves into different groups on the basis of their interests or problems. Each group elects a representative to a planning committee, whose function is to plan the program from week to week.

Procedure.—The activities of a workshop group for a typical day are as follows:

1. A general morning meeting of all members of the workshop is held. Topics of general interest are discussed by the director, consultant, visiting expert, and members of the workshop. These programs are designed to unify the workshop activities, serve as a general clearinghouse for information, and provide continuous motivation for the workshop activities.
2. At the noon hour participants have lunch together to enlarge acquaintance and to develop the spirit of good fellowship.
3. The afternoon is devoted to individual and small group activities. Conferences with consultants are held. Suitable library materials and audio-visual aids are utilized by individuals and groups. The different groups meet two or three times each week to discuss their specific problems. Provision is made in the schedule for members to work on individual problems and exchange ideas with each other. Flexibility in the organization is provided to permit individual members to withdraw from one group when his purposes have been served and become a member of another group.
4. The evening meetings are largely devoted to social activities and recreation.

Evaluations of their experiences by members provide fairly convincing evidence of the importance of workshops in an in-service education program for teachers. Workshop participation, however, represents only one significant type of educative experience. It does not contain all the desirable elements in a program of teacher education. Perhaps every teacher should have some workshop experience. Equally true is the fact that every teacher needs to engage in in-service learning exercises which are not stimulated and directed by group activity.

In respect to the relative value of local school workshops in comparison with college campus workshops, it should be observed that to relate the activities of the local workshop to the actual problems of a particular school is easier to do than in the campus workshop. On the other hand, it should be recognized that many local schools do not possess adequate financial resources or library facilities to conduct their own workshops. In the college-directed workshop, the library and other facilities are usually more satisfactory. The exchange of ideas among teachers from different schools in a campus workshop may serve a useful purpose in broadening viewpoints in regard to many school problems.

Demonstration Centers.—In some city and county school systems, a school which possesses the necessary facilities and competent teachers is designated as a demonstration center. Teachers from other schools are given the opportunity to observe the use of new curricular materials and techniques of teaching. Recently many school systems have established centers to demonstrate the proper use of audio-visual aids. Socialized procedures such as the project method and unit methods have served as the basis of many teaching demonstrations.

The value of demonstration to the individual teacher is dependent not only upon the quality of the teaching but also upon the ability of the observer to analyze, interpret, and adapt the procedures observed to his own teaching. To assist the observing teacher in this respect, pre-demonstration conferences are usually held between the demonstrating teacher and the observers, in which the objectives of the lesson are discussed. The demonstration is also followed by a discussion period in which the teaching procedures and outcomes are evaluated.

Study Clinics.—Representative teachers from many local school systems attend study clinics conducted at some of the larger universities for the purpose of making an intensive study of some significant problem under the guidance of experts. The list of topics ranges from improved methods of pupil evaluation to methods of understanding children. Important values can be achieved by this type of professional education, especially if the teachers attending the clinic return to their respective schools and share their learning with other members of their faculties.

Planning School Buildings.—In planning the construction of a school building teachers may be requested to consult with the school architect in regard to the utility of the building for instructional activities. The teachers who are to use the building should be in a position to supplement the architect's general knowledge of instructional requirements by suggestions in regard to the special problems of an educational program. This is particularly true in the planning of building units for special types of school work such as use of the library, art, homemaking, health, shop, and science. Teacher planning of this nature, when accompanied by careful study is an important means of professional growth. When the practice becomes more general, there will be a greater likelihood that a large number of school buildings will be designed which promote rather than handicap educational programs.

Orientation of New Teachers.—A continuous educational program is essential to the progress of a school. This continuity is often jeopardized by the large turnover in teacher personnel. For example, many curriculum revision programs have failed of fruition because the new teachers did not wholeheartedly accept responsibility for carrying it forward. This difficulty can be alleviated somewhat by the early orientation of new staff members to the ideals and objectives of the program.

New teachers may also encounter difficulty in making the necessary adjustments to the community. The older members of a school faculty can be of assistance to the new teacher in becoming oriented to the new school and community situation. A growing number of school faculties cooperate in extending various forms of hospitality to new members. Such plans have attained excellent results in maintaining cordial teacher-teacher relationships, thus providing a sound basis for constructive, cooperative educational endeavor.

Group Excursions in the Community.—A requisite for building a sound educational program is a thorough understanding of the community of which the school is a part. The attitudes and behavior of youth can be interpreted only in terms of their community background. A knowledge of community life is likewise essential to the proper utilization of community resources as curricular material.

In an endeavor to understand the economic and social conditions of their school communities teachers have organized community-study groups. As a part of their activities in this respect, teachers make planned excursions to various places in the community for the purpose of obtaining first-hand information in regard to local housing conditions, industries, welfare, and public service agencies. In larger schools, committees interested in various phases of community life may visit different places and make reports to the entire faculty. Teachers who participate in activities of this nature are better able to assist pupils to bridge the gap between school activities and life outside the school. More effectual application also can be made of curricular materials to the problems and needs of youth living in a particular community.

Planned Visitation and Observation.—Provision is made in schools for teachers to observe the work of other teachers in the same or other school systems. To insure the maximum benefits to the visiting teacher, it is necessary for the teacher and supervisor to plan the visits very carefully.

The possibilities of directed visiting in improving instruction are revealed by a consideration of their purposes as stated by Briggs.[2] He says directed visiting enables a teacher:

1. To see a concrete exemplification of some theory that has previously been to him merely abstract
2. To see some special practice or skill demonstrated well
3. To observe for comparison practices that are similar to or diverse from his own
4. To learn the effective use of equipment, direction of auditorium programs, rehearsing and producing of plays, preparation of exhibits, direction of the school publications, and the like
5. To acquire higher standards
6. To become acquainted with pupils soon to be promoted to him in the course that they are following
7. To learn of the success and failures in advanced courses of pupils whom he has taught and of the requirements that they have to meet
8. To know the work of the other teachers in the same school as a contribution to the unity of the corps

Budget Committees.—At the request of the superintendent, teacher committees in many school systems assist in the formulation of the general policies which govern the budget. Items which directly affect the economic well-being of teachers come under their scrutiny.

In the event the teacher becomes a member of the budget committee, he has the responsibility of familiarizing himself with the various needs of the school system as well as the obligation of exercising his influence in developing a well-balanced educational program.

Curriculum Committees.—One of the important objectives of a curriculum-revision program is the in-service education of teachers. The organization of a faculty for purposes of curriculum construction usually includes provision for various committees of teachers. In these committees the main work of revision is done. The policies which govern the work of curriculum committees are summarized in the following statement from the coordinator of instruction of the Oakland, California, schools:[3]

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[2] Thomas H. Briggs, *Improving Instruction*, New York: The Macmillan Co., p. 489.

> Teacher education rather than curriculum materials is the concern of our instructional program. Principals, teachers, and supervisors work together cooperatively, each making the contribution of which he is most capable. Committees serve for long or short periods as the need exists. The entire program is flexible and adaptable to current demands and current conditions.

The study of the multiple problems involved in curriculum revision presents excellent opportunities for teacher growth. One of the necessary and highly important phases of a curriculum development program is that of preparing courses of study for the guidance of teachers in using the suggested curricular materials. An examination of a typical course of study will reveal the great variety of problems which a curriculum committee encounters. The problems range from that of formulating a statement of the guiding philosophy of a course to the task of making a list of suggestions for evaluating pupil achievement. Another significant outcome of active participation by the teacher in curriculum committee work is that it increases his efficiency in the use of curricular materials to promote more effective pupil learning.

Activities of Other Teacher Committees.—In addition to continuing committees which study the persistent problems of the school program, many short-term committees function in connection with special problems such as improvement of guidance, library service, and teacher welfare in times of increasing cost of living. These committees are usually terminated after their study has been completed and their report with recommendations is made to the faculty.

Numerous other school problems in addition to those described in the preceding sections of this chapter have been studied by teacher committees. Through their committees, teachers in many school systems participate in the selection of new personnel. By means of interviews, questionnaires, and visits to other schools, the committee obtains information in regard to the qualifications and viewpoints of applicants for administrative and teaching positions in their school. School board relations committees represent teachers at some of the meetings of the board in discussions of various instructional problems. Problems of teacher welfare, such as tenure and retirement, have been the subject of teacher group study. In fact many of the teacher tenure and retirement plans now in operation were initiated and sponsored by committees of teachers. Instructional practices likewise have come within the scope of special committee study.

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[3] Quoted from *Leadership at Work, Fifteenth Yearbook* of the Department of Supervisors and Directors of Instruction, National Education Association, p. 100.

3. Membership in Professional Organizations

The teacher who seeks to keep up in his profession and improve it should be an active member of several professional organizations. These fall into three general groups:

1. State and national general education associations
2. Organizations centering around special fields of teaching or administration
3. Organizations primarily for the improvement of working conditions, salaries, tenure, etc.

National Association.—The National Education Association, founded as the National Teachers' Association in 1857, now enrolls more than 375,000, or 40 per cent of the teachers in the United States. It publishes the *Journal of the National Education Association*, which contains short articles on teacher growth and welfare, curriculum, and methods. In the N. E. A. there are twenty-eight departments primarily concerned with the problems of classroom teaching. In addition to these departments, to which reference is made elsewhere in this chapter, the N. E. A. has six deliberative groups known as councils or commissions.

The N. E. A. and its various departments and divisions issue yearbooks and bulletins containing much useful information. While the activities of the N. E. A. are designed primarily to promote teacher growth in service, it does have a legislative program looking to better support of the schools and has been somewhat active in that field. It has also functioned occasionally (and somewhat feebly) in matters of academic freedom and teacher tenure. The recent adoption of the Victory Action Program reveals a more aggressive and forward-looking attitude on the part of the N. E. A. The goals which the organization hopes to achieve by or before 1951 are as follows:[4]

1. Active, democratic local education associations in every community affiliated with the state and national associations
2. A strong and effective state education association in every state

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[4] *Victory Action Program,* adopted by National Education Association, Buffalo, New York, July 5, 1946.

3. A larger and more aggressive national education association
4. Unified dues—local, state, and national—collected by the local
5. A membership enrollment of at least 90 per cent in local, state, and national professional organizations
6. Unified committees—the chairmen of local and state committees serving as advisory members of the corresponding national committees
7. A professionally prepared and competent teacher in every classroom
8. A professionally prepared and competent principal at the head of every school
9. A professionally prepared and competent administrator at the head of each school system
10. A strong, adequately staffed state department of education in each state
11. A professional salary for all members of the profession, adjusted to the increased cost of living
12. Professional security for teachers and administrators guaranteed by effective tenure legislation
13. Retirement income for old age and disability
14. Cumulative sabbatical and sick leave
15. Reasonable class size and equitable distribution of the teaching load
16. Informed lay support of public education at local, state, and national levels
17. Units of school administration large enough to provide for efficient operation, with special attention to the needs of rural areas
18. Adequate educational opportunity for every child irrespective of race, creed, color, or residence
19. The equalization and expansion of educational opportunity, including needed state and national financing
20. A safe, healthful, and wholesome community environment for every child
21. An effective United Nations Educational, Scientific and Cultural Organization

The National Catholic Education Association is a strong organization for teachers in Catholic schools. A great many Catholic teachers also belong to non-Catholic associations.

Another general national education association, the American Education Fellowship, formerly called the Progressive Education Association, was founded in 1924. This organization stresses a modern philosophy of education, emphasizes the child and his growth, and education for fellowship and citizenship from the community to the international level. It has influenced educational thought and practice in recent years, despite the fact that it has never enrolled more than a few thousand members. The official journal of the organization is entitled *Progressive Education.*

State Associations.—Each state and territory has its own state education or teachers' association. Like the national organization, each of the state organizations issues a journal devoted largely to professional articles, news, and state problems. Most of these journals are of rather mediocre quality as to professional content, but contain many articles of interest to teachers of the particular state. The state associations have been more active than the national association in obtaining favorable legislation and school funds.

Following are typical objectives of state education associations:

1. To build an informed professional and civic intelligence among its members
2. To set every teacher at work on the problems of the profession and the community
3. To improve teaching, the curriculum, and school organization
4. To improve the selection and preparation of teachers
5. To foster a unified profession—strong on local, state, and national levels
6. To support important federal legislation
7. To improve adult and higher education
8. To build public support for our common schools
9. To foster world understanding and cooperation
10. To improve community life
11. To enhance teacher welfare, including:
    - (a) Statewide minimum salaries, with provision for progressively higher standards, and special recognition for added study or travel
    - (b) A modern salary schedule in each local community to meet its special needs
    - (c) Provision for teacher tenure and security
    - (d) Provision for sick leave and sabbatical leave on a cumulative basis
    - (e) Adequate provision for retirement on account of disability or age[5]

Organizations of Teachers in Special Fields.—There are more than a hundred national organizations which are specialized with respect to the scope of interest. Many of these are divisions or departments of the National Education Association. Among them are the following: American Association for Health, Physical Education, and Recreation; American Industrial Arts Association; Art Education; Business Education; Classroom Teachers; Home Economics; Music-Educators National Conference; National Association of Teachers of Speech; National Council for the Social Studies; Science Teachers Association; Secondary Teachers; Supervision and Curriculum Development; Visual Instruction; Vocational Education. These organizations are devoted almost entirely to the in-service education of their members along the lines of their special interest. All of these organizations publish journals, and a few publish in addition yearbooks, bulletins, courses of study, and special committee reports.

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[5] Joy E. Morgan, "Building an Action Program for the State Association," *Journal of the National Education Association,* XXXV, 165.

Teachers' Unions.—In 1902, the Chicago Teachers Federation affiliated with the Chicago Federation of Labor. In 1916, the American Federation of Teachers was formed as an affiliate of the American Federation of Labor. Because of the opposition of the National Education Association and of superintendents and boards of education who frequently intimidated teachers in their respective school districts, the membership in the American Federation of Teachers did not number more than 10,000 to 12,000 until the depression came in the 1930's. Since then, it has grown steadily until by 1947 it had spread into every section of the country and had an enrollment of more than 40,000 members. With few exceptions, the Federation is no longer opposed by school administrators. The official journal of the organization, *The American Teacher*, contains many articles of vital educational and social significance.

The Federation has two main objectives. It purposes to consolidate the teachers of the country into a strong group which would be able to protect its own interests. It aims to raise the standard of the teaching class by a direct attack on the conditions which, according to the belief of the Federation, prevent teaching from enjoying the status of a profession. These conditions are lack of academic freedom and of civil liberty and the absence of the opportunity for self-determination of policies and for democratic control.[6]

In Article II of their constitution, the objectives of the Federation of Teachers are stated as follows:

1. To bring associations of teachers into relations of mutual assistance and cooperation
2. To obtain for them all the rights to which they are entitled
3. To raise the standard of the teaching profession by securing the conditions essential to the best professional service

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[6] A. W. Robinson, *A Critical Evaluation of the American Federation of Teachers.* Chicago: American Federation of Teachers, p. 58.

4. To promote such a democratization of the schools as will enable them better to equip their pupils to take their places in the industrial, social, and political life of the community
5. To promote the welfare of the childhood of the nation by providing progressively better educational opportunity for all.[7]

The rapid growth in recent years of the American Federation of Teachers may be attributed largely to the academic and timid policy of the National Education Association. The relative ineffectiveness of the N. E. A. in obtaining greater financial support for schools and in preserving academic freedom have caused many teachers to seek membership in a more aggressive organization. The series of friendly meetings with the National Association of Manufacturers (a traditional and powerful force for lower taxes and opponent of measures and movements for social progress) which were sponsored by the leaders of the N. E. A. did much to weaken the confidence of many teachers in their national organization. Both the N. E. A. and most state associations are dominated and administered by school administrators, although some of the divisions, such as the classroom teachers' associations, have been free from such control and in some instances have been very effective in obtaining teacher-welfare legislation. A number of state organizations have been instrumental in obtaining better financial support for the schools.

The teachers' unions have been very effective in recent years in bargaining with boards of education for higher salaries and better working conditions for teachers. Unless the national and state associations develop a markedly more aggressive policy, it appears inevitable that some sort of teachers' union will eventually enroll a majority of the teachers in the country and become the leader of teachers and the aggressive advocate of their cause, in spite of the objection to having teachers or the schools, supposedly impartial leaders of youth, hold membership in a labor union.

In England and France there have been for some time powerful teachers' unions enrolling more than a majority of the teachers as members. These unions are unaffiliated with any labor union. In the authors' opinion, such a policy would be best in this country.

Local Associations.—There are in every locality one to a dozen educational associations of one kind or another. Most common of these are the city or county associations. In all except rural and village communities, there are at least a few others, e.g., associations of men teachers, branches of National Council of Teachers of English, etc.

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[7] Constitution of the American Federation of Teachers, as adopted at the Seventeenth Convention, and corrected as of September 1, 1945.

Should the Teacher Belong?—Every teacher should become an active member of at least three or four of these organizations including the following:

1. The local teachers' association
2. The state education association
3. The National Education Association
4. At least one specialized organization, e.g., National Council for the Social Studies
5. A teachers' union, if one is accessible

It is no longer to be considered undignified or unprofessional to belong to a teachers' union. In these days of organizations of employees and employers and of pressure groups, unorganized workers are at a serious disadvantage in commanding the respect of legislators or of other groups. One should not choose between the N. E. A., a state education association, and a teachers' union. The first should be supported for its activity at the national level and its publications, the union for its practical aggressive leadership in such matters as salaries, academic freedom, tenure, and other matters pertaining to teacher welfare, and the state education association for its leadership on a state-wide basis.

The total annual dues for five organizations of the kinds named above are at the present writing less than twenty-five dollars. These fees include subscriptions to valuable journals and other publications likely to contribute to the improvement of the teacher and to his professional advancement. Since most of these organizations are constantly fighting the battles for schools, for increasing teachers' salaries, and for improving working conditions for teaching, no teacher can conscientiously accept their benefits and refuse to contribute to their support. To do that is hardly good citizenship; moreover it is a demonstration of willingness to be an object of professional charity.

4. General and Professional Reading

General Reading.—As a part of his professional as well as his general cultural growth, the teacher must make definite provision for a systematic reading program. In preparing young people for the world ahead, the teacher must know that world and what goes on in it. Immediately upon beginning his teaching career he must expand and maintain his knowledge and understanding of the world in which his students will find their life and problems. He must continue to learn about public affairs—local, state, national, and international—otherwise he will soon become merely a "schoolmarm."

What is learned in college is no more than a foundation. It will not suffice even at the beginning, and as the years go by this knowledge will become outmoded. As President Robert Gordon Sproul of the University of California has said:[8]

> Nothing has handicapped the American educational plan more than the tendency of American citizens to think of schooling as a kind of vaccination against ignorance, and to consider that a concentrated dose of it in youth makes one immune for a lifetime. Actually, the immunity lasts only a few years, and unless it is renewed by periodic inoculations in study and thinking, one falls victim to a chronic type of ignorance which is often more dangerous than the acute form, because the patient, incompetent to recognize the symptoms, doesn't know he has the disease. We meet such chronic sufferers from ignorance everywhere. They look all right on the outside; ... But inside, their minds are suffering from atrophy. Instead of thinking through problems in the light of all available facts, they merely supply a pattern of opinions based on facts that went out of date along with their yellowing diplomas, and liberally garnished with prejudices that have accumulated in their minds like broken furniture in an attic.

The time has arrived when the well-read teacher, informe
problems and affairs in contemporary ~~American~~ life and cultu
the rule. The time is apparently not far in the future when, e
in rural and village schools and among superannuated teacher
exception will be the traditional lesson-learning "schoolmarm,
ivory-tower classroom creature who knows not the world in
he is preparing young people to live. As one speaker before
state education associations has frequently stated: "There is no
in the modern school for the young thing just out of college wi
head full of fraternity frivolities and notebooks full of inert boo
lecture data; or any other type of schoolmarm, male or female
takes refuge, ostrich-like, in the classroom with the children
the problems of a world in transition and thus seeks apparent
dom from responsibility for understanding the world of today,
others less well educated meet the problems of the times." Ev
public has begun to lose respect for the teacher and the scho

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[8] Robert Gordon Sproul, *Lifelong Learning*, Vol. IX, p. 12.

does not prepare young people to understand the new world—the "air age," the "atomic age," the new era of interdependence nationally and internationally, economically, politically, and culturally.

If the teacher has not already done so, he should learn to assimilate, discount, and interpret what he reads on current problems and affairs. In the authors' opinion, there are very few periodicals and practically no newspapers or radio commentators that can be relied upon to treat current issues impartially. Nevertheless the teacher through continual reading of biased publications grows steadily in his knowledge and understanding of such matters from reading on both sides. To read only journals with an anti-labor and pro-big-business bias or those with an ultra-liberal, pro-labor bias will result in at least partial misunderstanding of current, controversial issues.

Teachers, traditionally and overwhelmingly, are genuinely interested in world peace. World peace will come only as the result of mutual understanding among peoples of all quarters of the globe. The present generation of adults is relatively ignorant and provincial. They are unsuited for living in the age of atom bombs and international interdependence. Our hope lies in a new generation better educated for the new world. Likewise, peace and prosperity at home seem out of the reach of our present adult generation, whose education has been one for vocation and academic ivory-tower culture alone. Problems in this area also await a generation appropriately trained. Because of these conditions, teachers hold the key to world peace and to the continuation of our march toward democracy and a high standard of living for all.

Many teachers take each year a current affairs test such as that published by the Cooperative Test Service of New York City and attempt the following year to improve their scores. It is encouraging and indicative of the trends of the times that the National Teachers' Examination—one of the means of selecting teachers in many cities—includes a test on contemporary affairs and culture. A program of general reading should do more than keep the teacher informed in regard to developments in the world. A well-balanced program should make provision for reading of recreational books which entertain; new and timely books which the world outside the school is reading; books which will lead to good conversation at the dinner table; books which take one far afield to China, Mexico, or Russia; books read for their excellence of style; and books and magazines read "just for fun."

The teacher who wishes to enrich his experiences by reading should follow a program such as the following:

1. Read regularly at least one good daily newspaper that has accurate national and international news coverage, even if it arrives a day late from a city some distance away.
2. Read a local newspaper to keep informed in regard to community affairs.
3. Read or scan at least two weekly periodicals:
    (a) A journal with a bias in favor of the conservative view, e.g., *Time*.
    (b) A journal with a bias in favor of progressive and liberal ideas, e.g., *New Republic*.
4. Read at least one good general monthly periodical—*Harpers Magazine* or *Atlantic Monthly*.
5. Read at least one digest or short-article periodical, e.g., *Coronet* or *Magazine Digest*.
6. Read a few good books—one a month if possible—including annually at least:
    (a) Two classic books such as:
        The Bible
        Homer, *The Iliad* and *The Odyssey*
        Plato, *The Republic*
        Emerson, *Essays*
        Bacon, *Essays*
        Cervantes, *Don Quixote*
        Shakespeare, *Plays*
        Tolstoy, *War and Peace*
        Rousseau, *Émile*
        Hugo, *Les Misérables*
        Ibsen, *Plays*
        Shaw, *Plays*
        Franklin, *Autobiography*
        Gibbon, *The Decline and Fall of the Roman Empire*
        Twain, *Huckleberry Finn*
        Whitman, *Leaves of Grass*
        Darwin, *The Origin of Species*
        Dostoevski, *Crime and Punishment*
        Marx, *Capital*
        Dreiser, *An American Tragedy*
        Sandburg, *Abraham Lincoln; The Prairie Years*
    (b) Three or four books on current problems such as:
        People on Our Side, by Edgar Snow
        Time for Decision, by Sumner Welles
        Building for Peace at Home and Abroad, by Maxwell S. Stewart

The Road to Teheran, by Foster Rhea Dulles
Inside U.S.A., by John Gunther
America Unlimited, by Eric Johnston
A Catholic Looks at the World, by Frances E. McMahon
The United States and the U.S.S.R., by Vera M. Dean
The Road We Are Traveling, by Stuart Chase
The Shore Dimly Seen, by Ellis Arnall
Thunder Out of China, by Annalee Jacoby and T. H. White

(c) Two or three novels such as:

The Robe, by Lloyd C. Douglas
Drivin' Woman, by Elizabeth Chevalier
The Citadel, by A. J. Cronin
The Valley of Decision, by Marcia Davenport
Beneath Another Sun, by Ernst Lothar
A Tree Grows in Brooklyn, by Betty Smith
The Moon Is Down, by John Steinbeck
The Grapes of Wrath, by John Steinbeck
Time of Peace, by Ben Ames Williams
Lydia Bailey, by Kenneth Roberts

(d) One book on a historical, scientific, or other cultural subject such as:

The Age of Jackson, by Arthur M. Schlesinger, Jr.
The Progressive Era, by Claude Bower
America in Midpassage, by Charles A. and Mary R. Beard
Number One, by John Dos Passos
Peace of Mind, by Rabbi Joshua L. Liebman
You Cannot Escape History, by John T. Whittaker

In the past few years more interesting and reliable small books on current subjects have been published in series than ever before. Many of these publications can be purchased at nominal prices. The names of some of the best-known series are as follows: Pocket Books, Inc., New York; The Penguin Books, New York; National Home Library Foundation, Washington; and, in addition there are several series of excellent, inexpensive publications of pamphlet size which are widely read by educated men and women. These deal with current public questions, domestic and foreign. Some of these series are: *Headline Books*, Foreign Policy Association, New York; *Public Affairs Pamphlets*, on a wide variety of timely topics, Public Affairs Committee, Inc., New York; and *Town Hall Bulletins*, containing panel discussions of important, timely, current questions, The Town Hall, Inc., New York.

Professional Reading.—In planning a well-balanced program of reading the teacher should reserve some time for reading a few of the best current professional books and periodicals. No other single means of in-service education offers greater opportunities for the teacher to keep abreast of new developments and trends in the profession than those afforded by a carefully planned program of professional reading. Not only should the teacher keep informed in regard to developments in his own field of teaching but he should be familiar with the new and changing concepts of learning and teaching in related fields, in order that he may integrate his teaching into the total pattern of education. The new methods of procedure based upon the evolving concepts of learning and teaching which are described in current books and educational journals may often suggest to the individual teacher ways of improving his instruction. Adaptations of the suggested methods to the conditions of a particular teaching situation often lead to even greater refinements in the process of teaching.

Professional reading presents the teacher with the opportunity to share in the experiences of other teachers who are seeking to make their teaching more effective. The challenge and the stimulation that come from the reports of the endeavors of other teachers add zest to the efforts of the teacher who is desirous of improving his own teaching. Perhaps the greatest value which comes from reading a good professional book is that it enables a teacher to recapture waning enthusiasms and renew his faith in the power of education in human affairs.

Despite the inherent values in professional reading, there is considerable evidence to indicate that the reading materials of large numbers of teachers are very narrow both in scope and in variety. From the great mass of professional literature the teacher should carefully select materials for reading which best serve his needs. No definite prescription can be given that will meet the needs of all teachers. An adequate program of professional reading should include elements which provide information in regard to the following:

1. Significant developments and trends in public education
2. New concepts of learning and child development
3. Promising practices in curricular organization and teaching procedures
4. Developments and trends in fields related to the teacher's major teaching field
5. Newer practices and teaching materials in subjects taught

To assist teachers in selecting reading materials wisely, many educational groups and institutions periodically issue lists of selected books on education. Perhaps the best known of these is published each April in the *Journal of the National Education Association*, which lists the sixty best books on education published during the year. Many teachers read the summaries of articles published in the *Education Digest* and select those in which they are particularly interested to read in their entirety in the journal in which the articles were originally published. The *Education Index* contains a rather complete list of articles on education which are published in periodicals. Some of the magazines which feature articles of particular interest to the high school teacher are as follows:

The School Review
The Clearing House
Progressive Education
The American Teacher
The Educational Screen
School and Society

Each of the special teaching fields have periodicals published for teachers of those subjects. Some of the best-known are:

SUBJECT	JOURNAL
Art	*School Arts Magazine*
Business education	*The United Business Education Association Forum*
English	*English Journal, High School Edition*
Foreign languages	*Modern Language Journal*
Home economics	*Journal of Home Economics*
Industrial arts	*Industrial Arts and Vocational Education*
Mathematics	*The Mathematics Teacher*
Music	*Music Educators Journal*
Physical Education	*Physical Education Quarterly*
Science	*School Science and Mathematics*
Social studies	*Social Studies*

In a program of professional reading, the teacher should not omit the reports of research investigations in his field. Many of the findings of such studies can be adapted to classroom procedures.

5. OTHER MEANS OF PROFESSIONAL GROWTH

Professional Writing.—No other type of activity carries greater recognition than professional writing. The number and quality of published articles and books are among the most important criteria in determining teacher promotion in many schools. A consideration of the significance of professional writing reveals several good reasons why teachers engage in this type of activity.

The chief value of writing an article for publication accrues to the teacher who does the writing. The actual work of writing must be preceded by a careful study and analysis of the problem. The organization of the material requires the selection of the most relevant data and the rejection of those of minor importance. The necessity of writing the material in a manner to insure clarity, simplicity, and forcefulness of expression provides excellent training for a teacher in improving the quality of his classroom presentation.

Professional writing also enables the teacher to assist other teachers in the solution of some of their problems, thus extending his sphere of usefulness. A description or report of an effective classroom procedure may be instrumental in causing teachers in other schools to improve their own teaching. The classroom situation can be a learning laboratory for the teacher as well as for his pupils. The insights and understandings obtained as a result of firsthand experiences with the problems of pupils serve as a practical basis for significant educational writing.

Travel.—In Chapter 18 the suggestion was made that teachers should make visits to various places in the local community to obtain first-hand information in regard to living conditions. Valuable as these trips are, they should be supplemented by more extensive tours. Travel is an integral part of the teacher's preparation for teaching. If instructional materials are to be made meaningful to the pupil, they must first be meaningful to the teacher. The vividness and reality of verbal descriptions in books of places, persons, and events can be greatly enhanced by seeing them in their natural surroundings.

By granting salary increases comparable to those allowed for summer school attendance many school boards have recognized the importance of travel. Large numbers of teachers of modern foreign languages visit the countries where the languages are spoken. A knowledge of a people is indispensable to a genuine understanding of their language. Teachers of the social studies may obtain information and inspiration from tours of places of current economic and social significance as well as of centers of governmental activity and historical shrines. Teachers of science can benefit greatly by trips to different geographical regions to study first-hand the distinctive features of those areas. A vacation spent in one of the national parks should improve the teaching of biology teachers. Visits to great art galleries, libraries, and museums can contribute to better teaching of many subjects. Regardless of the subject taught, the teacher can enlarge his vision and discover means of making new applications of his subject by travel.

Many organizations sponsor guided tours for teachers to different parts of this and other countries. These tours have the advantages of convenience and economy. Too frequently, however, these guided trips are organized without sufficient recognition of the interests and needs of individual teachers. Perhaps it is advisable for the teacher to plan his own trip in terms of his particular purposes, interests, financial ability, and time available.

College Work.—The most convincing evidence that teachers as a group are desirous of improving their instruction is revealed by the fact that thousands of teachers take graduate college work after they begin their teaching careers. Large numbers of teachers attend summer schools conducted by colleges and universities. Many teachers, also, take advantage of the opportunities presented by correspondence and other extension courses to continue their college work in addition to their regular teaching duties. A considerable number of teachers spend their sabbatical leaves in graduate study.

Many school boards recognize the values of graduate study in improving the effectiveness of teaching by increases in salaries of teachers who earn additional credit either in summer school or during the school term. A few school boards require all teachers in their schools to attend summer sessions.

The chances are very great that college courses taken after a person has begun his teaching career will have more meaning and significance to him than similar courses taken before he has had any teaching experience.

The content of the course can be related more directly to problems encountered in actual classroom situations. Courses can frequently be chosen in terms of the specific problems of the individual teachers. Some of the most important values of summer school attendance are derived from informal discussions of teaching with teachers from other schools.

The significance of postgraduate work in improving teaching efficiency is dependent upon several factors. Since the quality of instruction varies greatly in different summer schools, the teacher should exercise intelligent discrimination in the selection of the college in which he is to do his study. The institution, instructors, and courses can be chosen in the light of the teacher's individual teaching problems and future professional plans. If good judgment is exercised in respect to these matters, the background of teaching experience and the earnestness which characterize the study of teachers combine to make summer school study an invaluable experience.

In the event that college courses taken by extension during the school term are closely related to problems being encountered by the teacher in his actual teaching, they can contribute greatly to teacher improvement in service. Properly correlated, the classroom situation can serve as a laboratory for the study of topics suggested in the course. Unless the two are supplementary, it is usually feasible to postpone the course until summer school.

Questions, Problems, and Exercises

1. Assume that you are a teacher in a high school with a faculty of thirty teachers located in a town of 10,000 population. Outline in some detail a plan for your own professional growth.
2. Under what conditions are school boards justified in requiring all teachers to attend summer school once every three years?
3. What are some of the difficulties involved in a truly democratic cooperative attack by teachers on a problem existing in their school?
4. Prepare a time budget which would enable you to devote a part of each week to general and professional reading.
5. To what extent do you accept the thesis that every teacher should have a chance to test for himself what is important in teaching and what is not?
6. Formulate a list of principles which should guide the teacher in his relationships with other teachers; with the principal; with the supervisors; with the school board.
7. Discuss the statement: "Teacher training institutions should fully prepare teachers in order that in-service growth will not be necessary."
8. Assume that you are chairman of a faculty committee appointed to study and report the possibilities of holding a summer workshop for teachers. Outline your procedure.
9. Make an inventory of the teacher committees in your school and list the work of each.
10. List some books in addition to those mentioned in this chapter which you would recommend for teachers to read.

Chapter 27

THE TEACHER AS A PERSON

1. Attributes of Effective Teachers

Numerous lists of qualities which characterize good teachers have been formulated by research workers and supervisors. There are certain traits which appear in all those lists. It should be kept in mind that qualities are included as separate items for purposes of analysis and study. In reality an effective teacher can be described only by configurations of many attributes. Many of the single qualities are mutually interactive in their impact upon the child. For example, the question as to whether the personality of the teacher has greater significance than his technical skill is pointless, since these characteristics supplement and reinforce each other. It is difficult to conceive of a teacher with an effective teaching personality who is deficient in teaching skills.

In a recent study of the qualities and qualifications of excellent teachers, school administrators and supervisors were asked to give reasons why they thought some teachers were outstanding.[1] Without exception, the officials gave a *combination* of qualities as the reason for excellence. The majority of them agreed that an excellent teacher "is a person (1) who has those personal qualities of agreeableness, consideration for others, sincerity, and the like, which, all will agree, make one a desirable associate, (2) who also is professionally interested and competent, (3) who has, among other qualities, scholarship and culture, and (4) who, in addition, respects children and is respected by children and establishes wholesome pupil-teacher relationships."

A great many investigations have been made in an attempt to discover the major individual factors which are associated with success in teaching. Among the factors which have been studied are the following:

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[1] *Report of the Investigation of Educational Qualifications of Teachers in South Carolina*, Columbia: University of South Carolina, p. 30.

Intelligence test score
Marks made in college
Age and sex
Amount of professional training
Years of experience
Amount of training in the field taught
Marks made in professional courses
Marks made in courses in field taught

In all of these investigations some criterion of teaching success was employed. In most instances the measure of success was determined by the rating of supervisors. From these studies one is forced to conclude that none of the factors investigated seems to be closely associated with teaching success as measured by ratings of supervisors, although there is a positive correlation. It appears that, given a reasonable minimum of intelligence and appropriate training, it cannot be shown statistically that there is very great relationship between teaching success and measures of any of the traits thought to contribute to teaching success. Of course it is more than merely possible that the ratings of supervisors are not reliable and valid measures of teaching success. In fact, many students of the problem have arrived at the conclusion that the coefficients of correlation, which are usually between 0.15 and 0.40, would be materially higher between the respective factors and *reliable* valid measures of teaching success.

Personal Traits of Successful Teachers.—Several studies have been made of the personal traits of successful teachers and of the relative desirability of various traits for success in teaching. The traits ranking highest in these studies are the following:

Breadth of interests
Cooperation and helpfulness
Leadership, initiative, self-confidence
Magnetism: approachability, cheerfulness, optimism, sense of humor, sociability, pleasing voice
Self-control: calmness, dignity, poise, reserve

The next highest group are the following:

Good disposition: appreciativeness, courtesy, tact, sympathy, kindness, consideration
Enthusiasm: alertness, animation, inspiration
Attractiveness: personal appearance
Adaptability

Good judgment: discretion, foresight, intelligence
Honesty and impartiality
Ability to explain clearly

The third group includes:

Scholarship and knowledge of subject
Health
Forcefulness: courage, decisiveness, firmness, purposefulness
Promptness: dispatch, punctuality

Almost invariably, if asked what qualities are most essential to teaching success, school administrators and supervisors place at the top of the list what they refer to as "teaching personality." In general, personality seems to include such things as animation, personal appearance, congenial manner, effective speech, emotional stability, apparent interest in students, maturity of thought and action, sense of humor, optimism, temperament, poise, and sociability. In analyzing teacher personality, it is necessary to consider the total impact of the total pattern of these qualities upon the pupil. The individual qualities which make for excellence are not identical in all effective teachers. It would be as undesirable as it would be futile to attempt to fit all teachers into a common mold. Individuality and uniqueness of teacher personality is a priceless ingredient of a teaching staff. Envisage the boredom of a group of high school pupils making the round of daily classes and meeting only teachers with "well-rounded" personalities. A distinctive set of personal qualities may enable a teacher to make a noteworthy contribution to the mental and social development of pupils. Moreover, personal characteristics requisite for effective teaching vary in kind and degree at different grade levels and in different types of schools and communities.

Pupils' Opinions of Characteristics of Effective Teachers.—In several investigations, high school students have been requested to indicate the characteristics of the teachers they liked best. Bryan[2] has given an excellent list of reasons why students' reactions should be considered in the evaluation of teachers. The study by Hart[3] of the opinions of 10,000 high school seniors is the most comprehensive of these investigations. In Hart's study it was revealed that high school seniors rate the ability to teach higher than personality traits of teachers. Other studies have revealed the same attitude of high school pupils.

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[2] Roy C. Bryan, "Why Student Reactions to Teachers Should Be Evaluated," *Educational Administration and Supervision*, XXVII, 560-603.

[3] Frank W. Hart, *Teachers and Teaching*, pp. 131-132.

In a recent study,[4] 1,076 eleventh grade students were requested to give reasons why they thought the teachers whom they named were the most excellent. A typical response was:

1. Seemed sincerely interested in progress of students and not personal gains.
2. Was intensely interested in subject taught.
3. Gave endless time, over what was expected, to students individually and to student activities.
4. Expected a great deal of students.
5. Inspired students to harder work, better living, better philosophy.
6. Neat, well dressed and well groomed personally.
7. Willing to give time to any student in solving individual problems connected with his course or not.
8. Often gave stirring, dramatic talks on philosophy, current affairs, life, personal ambition, occupational choices, self discipline, etc.
9. Interested in extracurricular activities, such as parties, picnics.
10. Formal enough in class.
11. An inspiring teacher and helpful.

Qualities Teachers Consider Important.—In their efforts to improve the quality of their teaching, teachers in schools have cooperated in preparing self-rating scales. In other school systems the self-rating sheets have been devised by supervisory officers to encourage teachers to think through their teaching competencies as a basis for a program of self-improvement. The faculty of the Glencoe (Illinois) School has developed a teacher self-evaluation scale which appears on following pages.

2. ACQUIRING AND MAINTAINING MENTAL HEALTH

Personality Adjustment.—Many of the causes of personality maladjustments have their origins in childhood experiences. A study by Symonds[5] of the needs of teachers as revealed in their autobiographies indicated that many of the feelings of inadequacy and insecurity among teachers can be traced to the overemphasis by parents and teachers of such matters as school achievement or slight deviations from the norm in personal appearance and behavior. The inner conflicts which arise as a result of the individual's inability to attain

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[4] J. McT. Daniel, *Excellent Teachers: Their Qualities and Qualifications*, p. 167.

[5] Percival M. Symonds, "The Needs of Teachers as Shown in Autobiographies," *Journal of Educational Research*, XXXVI, 672.

A. PROFESSIONAL RELATIONS	No Improvement Needed	Little Improvement Needed	Some Improvement Needed	Considerable Improvement Needed	Much Improvement Needed
1. Do I read professional literature in an attempt to increase my competence?					
2. Am I a participating, contributing member of the faculty organization?					
3. Do I assume my share of group responsibility?					
4. Do I have a genuine interest in professional organizations and utilize the opportunities afforded by them?					
5. Do I contribute to group thinking on problems of a general nature as well as those of particular interest to me?					
6. Am I genuinely tolerant of the opinions of others and open-minded on all matters under consideration?					
7. Having had an opportunity to voice my opinions, do I give wholehearted support to the decisions and accepted policies of the school without derogatory private comment?					
8. Do I inspire the confidence of the children by an understanding and friendly manner?					
9. Do I inspire the confidence of parents so that they feel free to talk frankly with me?					
10. Do I have the poise to withstand petty annoyance and maintain an emotional stability?					
11. Do I welcome opportunities to learn from and share with my fellow teachers and those in near-by schools?					
12. Have I sincere regard for and interest in the adjustment and development of beginning teachers and student teachers?					
13. Do I utilize opportunities for improving my professional competence through university study, travel, membership in study groups?					
14. Do I seek opportunities of broadening my experience and understanding through summer work of widely varied kinds quite apart from work with children?					
15. Am I as courteous to and thoughtful of children and colleagues as I expect them to be?					

B. Nonprofessional Relations	No Improvement Needed	Little Improvement Needed	Some Improvement Needed	Considerable Improvement Needed	Much Improvement Needed
1. Do I keep myself currently informed on social and political affairs?					
2. Do I read widely for my personal enrichment?					
3. Have I some intensive interest or hobbies that I follow?					
4. Have I a wide variety of other interests?					
5. Do I make it a point to be outdoors enough?					
6. Is there some form of exercise that I enjoy regularly in each season?					
7. Do I take time for rest and relaxation even when busy?					
8. Do I set aside some time for things of the spirit: church worship or quiet thought, etc.?					
9. Do I maintain active social contacts with people outside the profession as well as in it?					
10. Am I able at times to "shed my profession" completely?					
11. Do I assume some responsibilities in the larger social sense, contributing time or services or money to needy causes or people?					
C. Community Relations					
1. Am I thoroughly informed on the setup and functioning of the village government?					
2. Am I familiar with organizations in the community and do I participate in or make use of their services? Woman's Library Club Junior Auxiliary Rotary Club Chamber of Commerce Threshold Players D. A. R. Garden Club Historical Society Community Council Scouts Local churches American Legion Others					
3. Do I make use of the facilities offered by the Park Board?					
4. Do I use and encourage the use of the local library?					
5. Am I aware of civic needs within the community? If so, do I seek opportunity to offer suggestions and support measures undertaken?					
6. Do I contribute within my means to charitable and religious activities in the community?					
7. Am I familiar with and do I utilize in my work with children the many facilities which the community has to offer?					
8. Do I make use of resource studies such as Community File, Excursion Files, etc.?					

D. TEACHER-PUPIL RELATIONSHIPS	No Improvement Needed	Little Improvement Needed	Some Improvement Needed	Considerable Improvement Needed	Much Improvement Needed
1. Do I recognize the value in group planning and provide for it?					
2. Do I guide children in their plans rather than dominate them?					
3. Do I encourage my children to do their own thinking?					
4. Do I realize the value of thinking in the learning process?					
5. Do I establish certain routine procedures and responsibilities?					
6. Are the arrangement and order of my room and materials conducive to individual and group control?					
7. Is my relationship with children one of sincerity and rapport?					
8. Do I recognize the needs of each of my children and provide for their individual difficulties?					
9. Do I take time for the problems and interests of the individuals of my group?					
10. Do the children of my group have a feeling of status and "belonging"?					
11. Do I recognize my mistakes and admit my inadequacies to children?					
12. Do my children respect me because of my contributions to the group and not because of my status as a teacher?					
13. Whenever possible, do I regard undesirable behavior as an educational opportunity and use it as such?					
14. Do I recognize and care for the fatigue element in the individual and group control?					
15. Do I encourage thoughtful evaluation and discussion on the part of my children rather than do most of the talking myself?					
16. Does my group give evidence that I strive for self-control rather than imposed control?					
17. Does our planning make provision for a definite quiet period?					
18. Do I use supervisory services effectively?					
19. Do I avoid overstimulation by careful guidance and selection when opportunities such as assemblies, movies, etc., are offered?					

social acceptability and other desired goals represent a prolific source of personality maladjustment.

It is doubtful that a direct attack in which each undesirable personality trait is made the object of an intensive effort for improvement results in personality development. Since the traits function in combination, no one of them can be isolated for emphasis while all the others lie dormant. Likewise, resolutions by teachers not to be impatient, irritable, depressed, or dull seldom result in any material improvement.

In some teachers favorable qualities of personality seem almost to be inherited, they develop so early with so little conscious effort. In most teachers, at least a few of the traits have to be cultivated systematically over a considerable period of time. In some, practically all these traits have to be cultivated if they are to exist. Consequently, teachers vary a great deal with respect to the quality of teaching personality. Some persons of good minds and adequate or superior training are failures or at most very limited successes at teaching.

In a realistic program designed by the teacher to overcome his personality deficiencies, cognizance should be taken of the difficulty of eliminating maladjustments of long standing, especially if certain elements in the teaching situation aggravate the problems. A knowledge of some of the basic concepts of mental health should assist the high school teacher in meeting his own problems of personality adjustment as well as those encountered by his pupils.

Meaning and Significance of Mental Hygiene.—Mental health is an emotional and mental condition which is characterized by thought and behavior patterns which are satisfying to the individual and in reasonable harmony with the group of which he is a member. Life is a series of adjustments between the living organism and its social and physical environment. A well-adjusted individual is one who utilizes the resources available in his environment to meet his personal and social needs. Thus conceived, adjustment is the individual responsibility of each person.

Failure on the part of the individual to make adequate adjustments to his physical environment results in physical disability and impotence. The inability of the individual to adjust to his social environment results in the impairment of his personality. There are many degrees of mental illness, varying from the milder forms which are characterized by irritability and nervousness to the more serious types which are indicated by emotional instability, delusions, feelings of inferiority, moodiness, isolationism, imaginary persecution, and extreme melancholy. To the extent that human behavior patterns are specific, a person may be well adjusted to one situation and poorly adjusted to another. He may be well adjusted at one time in his life and not at another.

While the incidence of mental illness is high among teachers, they rank above the general population in respect to mental health. The really crucial issue involved in the mental maladjustment of teachers is its unwholesome effect upon pupils. Numerous investigations have revealed that the number of maladjusted pupils is much greater in classes taught by poorly adjusted teachers than the classes of well-adjusted teachers.

While the maintenance of mental health is largely an individual responsibility, there are present in many teaching situations certain factors which serve to intensify personal difficulties of long standing in the life of the teacher. In their extreme form, some of the unsatisfactory conditions under which teachers work may cause mental illness. In most instances, however, the conditions merely aggravate existing difficulties.

The factors which help and handicap a teacher in maintaining good mental health vary markedly from one teaching situation to another. In most instances the unwholesome influences can be modified or minimized and the wholesome features can be capitalized by an intelligent teacher. In the event the teacher's tendencies toward maladjustment and the undesirable factors in a teaching situation combine to produce a serious form of mental illness, the teacher should consult a psychiatrist or physician. Unless the difficulty can be eliminated, the teacher owes it to himself and his pupils to withdraw from teaching.

Program for Maintaining Mental Health.—Many less serious forms of mental disturbance can be removed by a prompt, practical, common-sense program, instituted and carried out by the teacher himself. The teacher who is desirous of maintaining good mental health may find some of the following suggestions helpful.

Recognize the Significance of Teaching.—A clear vision of the social significance of teaching may be gained by a consideration of the opportunities the high school teacher has to make desirable changes in the thinking and behavior of adolescents under his jurisdiction. Protecting the personality of the child from the forces that constantly tend to disintegrate it presents a challenge to the highest humanitarian instincts of the teacher. It should not be difficult for the teacher of courage and intelligence to realize the possibility of helping to create a better social order by teaching the truth about social and economic injustices. Charles Dickens declared his mission in life was "to make crooked places straight." Surely the teacher of today cannot be less of a crusader.

Unless the teacher can establish a strong faith in the improvability of the individual through the process of education, he should seek employment in a vocation more suited to his interests. Only a firm conviction that teaching is important can serve as a bulwark against the petty annoyances, irritations, and stresses of professional life.

The teacher who likes people and is genuinely interested in their welfare experiences little difficulty in developing a strong interest in teaching. Nothing short of a strong desire to help adolescents meet their numerous complex problems can give purpose and dignity to the work of the teacher. Endeavors of teachers who seek more tangible rewards in the form of financial returns and social status are both disappointing and futile.

Formulate a Sound Philosophy of Life.—Reference has been made in the preceding paragraphs to the teacher's need to accept a satisfactory philosophy of education which incorporates among other things a strong conviction in regard to the value of teaching as a form of human endeavor. This educational philosophy should be an aspect of a larger all-embracing philosophy of life. One's philosophy of life is a highly personal matter; however, sound social values should be given due recognition. A proper sense of values tends to give perspective and direction to one's life at all times, particularly in periods of extreme stress and strain. One teacher's set of values may vary considerably from that of another teacher, depending upon individual temperaments and experiences.

A teacher's mental health is highly dependent upon a guiding philosophy of life which is satisfying and gives purpose and direction to all his personal and professional activities. The details of an individual's philosophy of life are subject to constant modifications within the limits of its broader framework. A sound philosophy is ever evolving, always in the process of being acquired. It should, however, have sufficient stability to enable an individual always to relate his ideas and experiences to it; otherwise, it fails to be a guide to thought and action.

Keep Physically Fit.—There is considerable evidence to indicate that a close relationship exists between physical and mental health. They are mutually dependent. An unsatisfactory condition of one contributes to the failure of the other. Adherence by the teacher to a sensible physical fitness program is therefore essential to the maintenance of mental health. In planning a physical health program consideration should be given to the simple rules of health, such as exercise, sufficient sleep, and a well-balanced diet. The indoor work of the teacher should be counterbalanced by outdoor recreational activities. Adequate provision should be made for relaxation from the work of the classroom by engaging in leisure-time activities which take one's mind away from his work. Chronic fatigue and irritability may be symptoms of ailments which can be revealed by diagnosis and alleviated by competent medical treatment. The periodic physical examination, which is recognized as essential for pupils, is likewise important for teachers. Undue worry over minor ailments is both a cause and a symptom of emotional instability.

Cultivate a Sense of Humor.—It has been said facetiously that everyone needs a sense of humor to console him for what he *is* and a vivid imagination to compensate for what he *is not*. While the work of the teacher should be taken seriously, there is an ever-present danger that the teacher will take himself *too* seriously. In their excellent yearbook entitled *Fit to Teach*, a committee of the Department of Classroom Teachers of the N. E. A. stated that an individual should be able to laugh at other people, and with other people, and especially to laugh at himself. The position of the teacher tends to encourage pupils to accept his word as final authority. This acceptance of the teacher's ideas, without any questions asked, often causes him to overestimate the wisdom of his own words. Such an attitude may result in maladjustment of the teacher to out-of-school situations in which *other persons* may take issue with him.

In the classroom a sense of humor will often serve to "calm the troubled waters." The possessor of a sense of humor tends to avoid overemphasis upon minor difficulties and other trivial matters. To acquire a sense of humor, the teacher must learn to see matters in their true perspective and not to "engage in a major fight over a minor issue."

Develop Strong Avocational Interests. No one can prescribe leisure-time activities for another person. Each individual is free to "write his own ticket," to choose his activity or hobby. Aside from the practical limitations of money and time, the teacher because of his training should be able to make a wise choice of leisure-time activities. Certainly the teacher should have some strong intellectual interests beyond the requirements of his teaching. Hobbies in art, music, and books present opportunities to satisfy the creative and intellectual urge. If the need for achievement is not met by one's professional activities, gardening and use of materials may give a feeling of mastery that is conducive to mental health. Perhaps every person should engage in some activity "just for fun." The teacher who knows how to play seldom becomes blue, discouraged, or bored with life.

Beyond one's special interest in a hobby, a satisfactory leisure-time program should include a variety of activities which bring one into contact with people, music, poetry, and the beauty of nature. The sources of one's interests in activities in which he is free to engage are numerous. A slight interest in a particular activity may grow, if properly cultivated, into an all-consuming enthusiasm which enhances and adds zest to professional activities.

The manner in which one engages in leisure-time activities also goes far to determine their value. The attainment of the objectives of carefully planned walks or tours often becomes a chore. When you take hikes or walks, do so without a definite destination. Let the caprice of the moment take you where it will. Leisure-time activities are important means of adding breadth and variety to one's vocational activities. They do not "compensate" for the drudgery of work in which a person has no real interest. If an individual likes his vocation, he will not find it necessary to think of avocational activities as merely something to counterbalance the displeasure he finds in his vocation.

Know Yourself, Accept Yourself, and Be Yourself.—Objective self-analysis in which one assesses his own strengths and weaknesses is difficult, but it is essential in overcoming deficiencies in personality development. Equally important is the discovery of the causes of one's maladjustment. An individual tends to overrate himself on those traits which appear to be important and underrate those which seem to be of little importance; for example, a person may underrate his handwriting ability, hence the common expression, "I cannot read my own handwriting," yet he seldom admits he is dishonest or untruthful.

The recognition of one's limitations should be accompanied by their acceptance. Attempts "to do the impossible" in terms of one's ability lead to discouragement and frustration. On the other hand, failure to utilize one's abilities fully and a shirking of responsibility tend to destroy the keen enjoyment of living.

Likewise necessary to mental health is the ability to discard all forms of pretense and be one's self. Efforts of teachers to identify themselves with persons in the self-styled social elite class is tragic to both teacher and pupils. A well-known writer recently portrayed a teacher who was desirous of lifting herself out of her own social class by catering to all the "nice little boys and girls" from the wealthy families and ignoring and humiliating the children from the poorer homes. Teachers should recognize the dignity of a profession that serves "all the children of all the people." Indulgence in self-pity and expressions like "I am just a teacher" reveal a distressing type of vocational maladjustment with its concomitant lack of personal and social adjustment.

A study of the foregoing list of suggestions, along with others which might be added, reveals that the teacher's task of maintaining good mental health is similar to that of any other person. A useful summary of mental health precepts has been formulated by McKinney[8] as follows:

1. Keep yourself physically fit through hygienic habits of rest, exercise, diet, and cleanliness.
2. Face your troubles, worries, and fears; do what you can about them, then turn your attention to more pleasant things.
3. Have several absorbing hobbies, interests, social games, or sports in which you like to participate.
4. Guide your impulses and emotions in desirable channels rather than suppress them.
5. Strive to become a balanced personality instead of an extremist.
6. Develop a sense of humor; be willing to admit your own mistakes and laugh at yourself.
7. Have several major goals in the line of your abilities and enjoy working toward them.
8. Acquire real friends and companions who will share your fortunes and troubles.
9. Avoid strain; develop serenity; relax all muscles that are not necessary for the task at hand.
10. Build the habit of enjoying the present by drinking in the beauties of the world around you.
11. Be courageous in crises; don't run from them.
12. Grow daily by creating things yourself rather than being merely a spectator, dreamer, and nonproducing consumer. There is fun in striving.
13. Don't be overconscious of your uniqueness. Realize that most of us are ordinary people.
14. Realize time heals many wounds; be patient and hopeful.

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[8] Fred McKinney, *Psychology of Personal Development*, pp. 548-549.

15. Seek love, adventure, safety, and success—but be sure it is the kind that you can fully enjoy.
16. Develop your philosophy; know where you stand and adjust to the conditions you must meet.

Other Characteristics of Effective Teachers.—The extent to which teachers are successful in producing desirable changes in the attitudes and behavior of pupils is the measure of teaching effectiveness. Increasing knowledge and developing skills are only the means to those ends. There are certain characteristics of teachers which appear to be closely associated with teaching effectiveness. Reference to some of the qualities of successful teachers has been made in preceding sections of this chapter. In addition to those already mentioned the teacher of children in our present-day democracy should possess:

1. An understanding of children
2. An understanding of the times in which he is teaching
3. An abiding faith in education and the usefulness of teaching
4. A devotion to the ideals of democracy

1. *Understanding Children.* Understanding children involves a knowledge of human development, learning, and behavior. This information can be acquired by a study of the scientific facts which explain human growth in the terms of biology, psychology, and sociology. It is necessary, however, to supplement these facts with knowledge obtained by observation of, and association with, all types and conditions of men. Familiarity with the isolated factors in human development has little significance unless one is able to recognize their interdependence.

The prevailing idea that teachers, by the nature of their work, are necessarily isolated from life is erroneous. Every classroom is a psychological and sociological laboratory in the truest sense of the term. The teacher who is interested in people has unparalleled opportunities not only to observe, at firsthand, the development of human beings but also to promote that growth. To the alert, intelligent teacher, the local community serves as a social laboratory to increase his understanding of human behavior. Careful study of children in school and out has given him significant insights into social living. Among the most important of these are:

1. The uniqueness of each individual child in regard to mental abilities, interests, social adaptability, and emotional drives
2. The potential contribution each individual can make to the general welfare

3. The need for a series of "common developmental tasks" in the education of all children
4. The advisability of withholding judgment of a child until all relevant facts are available
5. The necessity of recognizing that there is a *cause* underlying all forms of child behavior (An analysis of behavior usually reveals that an individual's "actions are based upon his past experiences, shaped by his present situation, and influenced by his desires and hopes for the future." [7])

2. *Understanding the Times.* Teachers who seek to assist adolescents in making adjustments to the world in which they live must know that world. They must be aware of the economic and social forces which shape the world and influence the thoughts and actions of men. They should be well informed in regard to the economic interdependence of the various peoples of the earth. They should be cognizant of the degree to which political democracy in some sections, and economic democracy in all sections, of our country has failed of attainment. Basic to service in democracy's schools is a realization that the cornerstone of democracy is respect for human personality, regardless of race, color, or creed.

A knowledge of America, her past struggles, her present strengths and weaknesses, and her aspirations for the future, should be part of the equipment of every American teacher. Above all, he should recognize the dynamic character of our democracy and be tolerant of social and economic change. Finally, the teacher should be a student of international affairs with a full knowledge of the need for political and economic cooperation among all peoples.

3. *Faith in Education.* Our system of universal secondary education is based upon a faith in the improvability of the individual through a process of formal education. This belief in the inherent value of the individual is linked with the idea that the existence of a democratic society is dependent upon the ability and willingness of society to provide the means of guaranteeing a constant flow of intelligent, well-informed citizens into its life stream.

It is essential that the teacher be convinced of the soundness of these assumptions. Unless he firmly believes that education is a potentially great force in the lives of men, the greatness of teaching will evade him. A blind acceptance of the significance of education is equally tragic. The teacher must recognize that education is not a formula which can lift men by magic out of their ignorance and selfishness. Human progress is painfully slow. Agencies other than the school influence the actions of mankind for good or ill. At times it may appear that the efforts of the school are fruitless, thwarted as they are by other forces. Only a vital, realistic program of public education can hope to counteract these influences. Herein lies the constant challenge to the teacher to vitalize his teaching.

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[7] *Helping Teachers Understand Children*, Commission on Teacher Education of the American Council on Education, p. 8.

In spite of the disappointing outcomes of many of the efforts of teachers, there is ample evidence to demonstrate the power of education. Unless a person senses the social significance of teaching, and unless he is desirous of rendering a service which will ennoble mankind, he should not engage in teaching.

4. *Devotion to Democratic Procedures.* Democracy is not achieved by a people in a single supreme effort and enjoyed forever afterwards. To be retained, it has to be rewon daily. Eternal democratic effort is the price of democracy. The school has the responsibility of rekindling the spirit and replenishing the substance of the democratic way of life.

The individual counts for much in terms of the general welfare in a democracy. It is of the greatest importance, therefore, that he be educated in schools dedicated to the principles of human rights, individual opportunities and social responsibilities. Dictatorial practices in the classroom subdue and frustrate the child rather than assist him in becoming a self-directing, effective member of a democratic society.

A teacher who is intelligently devoted to the democratic process will in his relationships with pupils advance the general welfare by being concerned with the welfare of each child, regardless of his intelligence, race, social status, or economic condition. He guides the child to a recognition of the fact that in a democracy the individual has responsibilities as well as rights and privileges. He assists the child in translating democratic ideals into action in his daily association with other children in the classroom, on the playground, and at school dances, as well as in out-of-school activities. He arranges situations in which all the children will have meaningful experiences in sharing responsibility in planning, managing, and evaluating their own activities.

Managerial Abilities of Effective Teachers.—In the preceding sections of this chapter, emphasis has been placed upon desirable attitudes, outlooks, and understandings of the teacher. Some reference should be made to the abilities of the teacher as a leader of pupils in classroom activities. The qualities which characterize the effective teacher can be revealed by an actual record of a classroom situation in which the teacher

> ...guided students into stimulating learning activities in terms of their present interests and future needs. He assisted pupils in developing worthy purposes and goals. He led the pupils in the adventure of selecting and planning learning activities appropriate to the goals. The study of a variety of source materials was a vigorous process in which both pupils and teacher engaged. Individual and group responsibility was fostered. The pupils were enabled to interpret their classroom experiences in terms of everyday problems. New problems growing out of the present work were suggested by pupils. Individual pupil initiative was encouraged and recognized. Provision was made for the special abilities, interests, and needs of individual pupils by appropriate types of projects, methods of procedure, and different required standards of proficiency. Pupil records of achievement were made in the form of test scores, statements of the pupil's contribution to the thinking of the group, and anecdotal material.

3. LIFE IN THE COMMUNITY

Values of Community Participation.—The superior teacher today recognizes the fact that the school is one of the more important community agencies. It is of and for the community. As a responsible leader in such an organization, he cannot escape his responsibility of active participation in community life. Whether the people of the community expect it or not, the teacher should participate in all those activities of the community which have for their objectives the improvement of social and economic conditions. His participation may not only serve to make those agencies more effective but also be of service to the school. Frequently the adverse criticism directed toward teachers is a result of a lack of acquaintance with and understanding of the teacher. If the person who hears derogatory statements in regard to the teacher's activities knows the teacher personally, he may properly discount the remarks. A teacher gains status in a community by assuming appropriate responsibilities in its affairs. Effective community participation is based upon an understanding of the resources, needs, and customs of the community.

As an adult individual, the teacher benefits immeasurably by association with mature adults. Perhaps nothing is more conducive to the impairment of the teacher's mental health than his exclusion from the normal social activities of adults. The teacher has been characterized as a "creature set apart" in the typical American community. Too often this is a self-imposed role. In most instances the apparent social ostracism can be overcome by the teacher's taking a genuine interest in the affairs of the community. The fact that the morals of the community may be different from those in other communities in which the teacher has lived should serve to stimulate rather than discourage his participation in community life.

Suggestions for Participation.—It is a truism to state that the teacher's primary responsibility is to teach the pupils enrolled in the school. This suggests that the teacher should exercise discrimination in regard to the type and number of community activities in which he participates. There is the ever-present danger that the teacher may dissipate his energies by becoming a "professional joiner" of organizations which have little significance to his own or the community welfare. In making decisions in regard to which activities should be given priority, the teacher should give preference to those which are most closely related to the educational and social welfare of the youth of the community. This decision is not as simple as it may appear, since the adolescent's development is influenced by practically every aspect of his community environment. This suggests another important reason for the teacher to participate in community activities. Only as the adolescent is considered against the background of community life is it possible to understand his attitudes, aspirations, and behavior.

Also the leadership of the teacher is needed in most communities in matters which tend to promote better racial relationships and more intelligent understanding by all the people of vital economic, political, and social issues. Effective community participation is dependent upon an understanding of the resources, needs, and customs of the community. Failure to recognize the peculiar social cleavages which exist in a community may result in the teacher's becoming identified with, if not actually embroiled in, factional rivalries, thus detracting from his usefulness as a potential leader. While the teacher has the right as a person and as a citizen to participate in those activities from which he derives the greatest satisfaction, the basic criterion is the probable effects of such participation upon his position as a responsible leader.

The Community and Teacher Behavior.—In the realm of moral values as well as in intellectual matters the teacher is expected to set an example of nobility and the "good life." Many of the important concomitants of learning, including the ideals of ethical behavior, are acquired by association with other persons. Especially during adolescence, example is stronger than precept. The parent who is not always careful about setting an example of exemplary conduct for his own children insists that the teacher do so. This responsibility of the teacher carries with it the opportunity to engage in the most effective kind of teaching. Henry Van Dyke said: "Knowledge may be gained from books, but the love of knowledge is transmitted only by personal contact."

In America, one of the main responsibilities of the teacher is to assist in making the ideals of democracy functional in the lives of children in our schools. To be effective in this respect the teacher's personal and professional conduct must personify democratic ideals. In order that the effectiveness of the individual teacher may be increased and the welfare of the entire profession promoted, it is essential that the activities of teachers be in accord with ethical standards of conduct.

While it is not advisable for the community to restrict its teachers with minute regulations regarding the details of their personal or professional lives, the public through its school board has the right to choose whom it will employ as teachers, and it will employ those who conform to the moral and social standards of the community.

It is extremely difficult for the public to disassociate the teacher's professional activities from his personal life. Thus a teacher's effectiveness in the classroom is influenced in no small part by his reputation in the school and community. This idea of unity was expressed by Herbert Hoover in speaking at the annual convention of the Department of Superintendence when he said,

> The public school teacher cannot live apart, he cannot separate his teaching from his daily work and conversation. He lives among his pupils during school hours, and among them and their parents all the time. . . . His office, like that of a minister of religion, demands of him an exceptional standard of conduct.

4. Professional Ethics

The teaching profession, like most other professions, has formulated creeds or codes of professional ethics for the guidance of its members. The various state associations and the National Education Association have adopted and published statements of rules designed to govern the professional activities of teachers. The standards of conduct suggested in the codes may be classified into six areas of teacher relationships: (1) to the pupil, (2) to other teachers, (3) to the community, (4) to the profession, (5) to the administrative officers, and (6) to the board of education.

Code of the National Education Association.—While the details of content vary somewhat in the various state codes for teachers, they are all patterned largely on the Official Code of the National Education Association. The following condensed statement [8] of the code of the N. E. A. contains the main points of emphasis to be found in all the codes.

The teacher should be courteous, just, and professional in all relationships.

Desirable ethical standards require cordial relations between teacher and pupil, home and school.

The conduct of the teacher should conform to the accepted patterns of behavior of the most wholesome members of the community.

The teacher should strive to improve educational practice through study, travel, and experimentation.

Unfavorable criticism of associates should be avoided except when made to proper officials.

Testimonials regarding the teacher should be truthful and confidential.

Membership and active participation in local, state, and national professional associations are expected.

The teacher should avoid indorsement of all educational materials for personal gain.

Great care should be taken by the teacher to avoid interference between other teachers and pupils.

Fair salary schedules should be sought and when established carefully upheld by all professionals.

No teacher should knowingly underbid a rival for a position.

No teacher should accept compensation for helping another teacher to get a position or a promotion.

Honorable contracts when signed should be respected by both parties and dissolved only by mutual consent.

Official business should be transacted only through properly designated officials.

The responsibility for reporting all matters harmful to the welfare of the school rests upon each teacher.

Professional growth should be stimulated through suitable recognition and promotion within the ranks.

Unethical practices should be reported to local, state, or national commissions on ethics.

The term "teacher" as used here includes all persons directly engaged in educational work.

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[8] "Ethics for Teachers: A Condensed Statement of the Code of the National Education Association," *Journal of the National Education Association*, XXXIII, 117.

Bill of Rights for Teachers.—The value of written codes has been questioned by many persons, as being "counsels of perfection" which no mortal can hope to observe. Admitting that the codes are idealistic, no one will doubt the importance of striving to attain the suggested standards. Another limitation of teacher's codes which is often mentioned is the "Thou shalt not" spirit which seems to permeate most of the codes. It should be remembered that a code is not a *bill of rights* for teachers. Perhaps teachers in this country should formulate a bill of rights containing items in regard to academic freedom, security of position, a living wage, etc., as part of their code of ethics, or as a separate instrument. An evolving bill of rights for teachers which was suggested by Schorling[9] is as follows:

1. The right to teach classes that are not too large—in general, from ten to twenty pupils
2. The right to have time in the school day for planning
3. The right of a 45-hour week
4. The right to adequate compensation for the full year of fifty-two weeks
5. The right to an adequate amount of helpful and constructive supervision
6. The right to have good materials and enough of them
7. The right to work in a room that, with the help of the students, can be made pleasant and appropriate to the tasks to be learned
8. The right to the same personal liberties which other respectable citizens assume for themselves as a matter of course
9. The right to an internship
10. The right to a realistic program of in-service education
11. The right to participate in modifying the curriculum and methods, and in formulating school policies
12. The right to keep from being lost in the profession

QUESTIONS, PROBLEMS, AND EXERCISES

1. Outline a program designed for the acquisition of a desirable personal trait.
2. Suggest how an individual might change or eliminate an undesired personal trait.
3. What are some of the symptoms of an inferiority complex in a teacher?
4. What are some of the factors which may influence social maladjustment among teachers?
5. Plan a schedule of your daily activities which provides time for recreational activities in addition to provision for those of a personal and professional character.

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[9] Raleigh Schorling in *The School of Education Bulletin*, University of Michigan, XXVII, 122-125.

6. Prepare a paper in which you list your recreational interests, indicating the sources of these interests, and describe in some detail your favorite hobby.
7. What factors should a person take into account in considering teaching as a career?
8. Indicate how a teacher may acquire an effective teaching personality.
9. Recall the teachers you had in high school. How many of them exercised a lasting influence upon your thinking or behavior? Describe the most outstanding characteristics of those who did influence your thinking.
10. What are the chief values of self-rating devices for teachers?

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INDEX

Abilities,
  differences in, 31-32
  general learning, 382
  information concerning, 385-386
  in study, 162-163
  pupil grouping according to, 396-397
  specific, 382
Academic freedom,
  and responsibility, 536-537
  national leaders on, 533-534
  recent trends in, 535
  right of, 532-533
Acquisition,
  authoritative *v.* developmental methods of, 82-83
  of habits and skills, 89-90
  of knowledge, 81-88
  of tastes and ideals, 93-96
  psychology of, 89
  value of visual aids in, 308-309
Activities,
  culminating, in laboratory learning, 500
  of pupils in lecturing, 239-240
  study activities, 139-140
  (See also "Extra-class activities")
Activity,
  principle of, 58-59
  self, 100
Adjustment, pupil,
  conditioned by group morale, 110-112
  effect of punishment, 114-117
  emotional, 23
  guidance in, 102-103
  influence of physical development, 106
  relation to discipline, 113
  relation to mental maturity, 108
Adolescence, problems of, 470
Adolescent (See "Pupils, high school")
Aims,
  criteria in selection of, 132
  in lesson plans, 131
  of socialized procedures, 184-185
American Education Fellowship, 554
Analogies, in lectures, 238-239
Anecdotes, in lecture, 238
Annoyance, effect of, on learning, 60
Answers, teacher handling of students', 266-267
Apperception,
  principle of, 64
  teaching based upon, 65-66
Appraisal,
  of project method, 212-213
  (See also "Evaluation")
Appreciation,
  development of, 95-96
  nature of, 94-95
  of motion pictures, 319-320
Art,
  community resources in, 374-375
  guidance in, 484
  projects in, 216
Assignment,
  characteristics of, 151
  differentiated, 398-401
  evaluation of, 153-154
  flexible, 401-403
  functions of, 150-151
  making the, 152-153
  out-of-school radio broadcasts, 343
  trends in, 150
  unit assignment, 223-224
  written assignment, 153
Assimilation step in Morrison plan, 206
Association,
  applications of, 63
  implications of, for learning and teaching, 62-63
  principle of, 61-64
Attention,
  Dewey on, 72
  distractions, 77
  principle of, 67-68
  relation to interest, 72
  spontaneous, 74
Attitudes,
  development of, 92-93
  influence of visual aids, 309
  meaning of, 92
  non-curricular contribution to development of, 83
  value of radio in creation of, 336
Audio aids,
  facsimile, 350
  phonograph records, 339-341
  public address systems, 333-335
  pulse modulation, 350
  radio, 335-339
  sound-recording equipment, 347
  sources of information concerning, 352
  television, 350-351
  types of, 333
  values, 332
Authoritative methods of teaching,
  advantages of, 83
  v. developmental type, 82

Behavior,
  and instruction, 49

Behavior—*Continued*
  concomitant outcomes, 50
  environmental components in, 51
  of good citizens, 48
  types, 47
Bill of rights, for teachers, 588
Building facilities, as limitations on curriculum, 288

Camps, school,
  philosophy of, 367-369
  planning, 366-367
  programs, 368
  significance of, 366
Card catalog, instruction in use of, 173
Cartoons and posters in teaching, 324-325
Character development,
  co-operating agencies in, 117
  discipline related to, 101
  ratings of, 389
  traits, 479
Children, understanding, 582
Citizenship, behavior components of, 47
Collateral readings,
  types of, 302
  use of, 302-303
College work, as means of in-service education, 566-567
Commercial classes,
  drill in, 247
  guidance in, 484-485
  projects in, 216
Committees, teacher,
  budget, 551
  curriculum, 551-552
  on special school problems, 552-553
Community-centered school,
  Holtville, Alabama, 359
  Radford, Virginia, 360-361
Community, concept of, 353
Community life,
  effects upon youth, 105
  student participation in, 358-359, 361
  teacher conduct in, 585-586
  teacher orientation in, 373-374
  teacher participation in, 584-586
Community resources in teaching,
  community as educational laboratory, 355
  community defined, 353-354
  documentary sources, 365
  educational values, 354-355
  excursions to study, 362
  interviews on, 365-366
  obtaining information about, 359
  pupil participation in, 358-359
  school camps, 366-369
  surveys of, 359-362; Kilpatrick on, 361-362
  use of, in high school subjects, 355-358, 373-379
  work experience, 369-370
Content, evaluation of, 287
Contracts, teachers,
  continuing, 530-531
  fulfilling, 532
  nature of, 532
Cooperation,
  between school librarian and teacher, 171
  in preparation of resource units, 122-124
  in research, 517
  of teachers in in-service growth, 544, 571, 572-574
Core curriculum,
  definition of, 122
  guidance in, 482
  resource units in, 122-124
Councils, teachers, in in-service education, 547
Counselor, teacher,
  opportunities of, 11-12
  suggestions for counseling, 473-474
Course of study,
  adaptation of,
    to classes, 280
    to students, 284-291, 395-407
  as flexible, tentative outline, 54
  definition of, 38, 279
  essential concepts in construction of, 281-284
  relation between official course and teacher-adapted course, 283
  relation of, to curriculum, 282-283
  teacher's role in constructing, 279-280, 282
Curriculum,
  accrediting agencies, 288
  and changes in pupils, 53
  and changing American life, 52-53
  as environment, 41
  community-centered, 355
  contribution of, to environment, 38
  co-ordination of, with other growth factors, 51
  definition of, 83
  legal requirements for, 288
  nature of, 281
  procedures for determining, 47
  relation of, to methods, 55-56
  responsibility of teacher for, 54-56
  supplementation of, 493-494
Cycle, Morrison's teaching, 205

Dalton plan, 404
Deductive method (See "Problem-solving")
Democracy,
  dependence of, upon self-disciplined citizens, 101-102
  economic, 15-16
  rational behavior in a, 99
  teacher devotion to, 583
  teaching for, 14-16

- Demonstration centers for in-service education, 549
- Demonstrations,
  - demonstration films, 315
  - for arousing interest, 151
  - in science, 497
- Diagnosis,
  - Brueckner, L. V., on, 407
  - diagnostic inventories, 408
  - diagnostic tests, 409
    - in mathematics, H. R. Douglass on, 409
  - in drill, 245-246
  - measurement for, 412
  - of pupils' study habits, 159-162
  - teacher's responsibility in, 13
  - types of diagnostic procedure, 407
- Dictionary, teaching use of, 173-174
- Discipline,
  - and order, 103
  - as growth in social responsibility, 112
  - basic concepts of, 99-101
  - change in agencies of, 33-36
  - changes in attitudes toward, 36
  - constructive suggestions for, 115-117
  - co-operating agencies, 117
  - differences in home, 32
  - "don'ts" in, 118-119
  - effect of community standards upon, 105
  - effect of physical health on problems of, 106
  - Good, W. R., on, 102
  - honor system, 112
  - implications of:
    - for individual development, 102
    - for success in teaching, 103
  - influenced by home, 108
  - lessened opportunities for discipline through work experience, 36
  - need for individual diagnosis and treatment, 100
  - objectives of, 99
  - pupil participation in school management, 112-113
  - rational human behavior learned, 99
  - relation of, to economic and social status, 104-106; to group attitude, 110-112; to pupil adjustment, 113
  - role of teacher in, 101, 103, 104, 107
  - significance of, 101-104
- Discussion, public, techniques of, 192-193
- Documents, in community study, 365
- Drill,
  - devices for motivating, 250
  - diagnosis in, 246-247
  - function of, 243
  - individualization in, 245-246
  - in retention, 85
  - in subjects, 246-248
  - memoriter, 3
  - need for, in development of skills, 89, 252-253
- Drill—*Continued*
  - oral quiz as, 253
  - principles of learning underlying, 243-244
  - procedures in, 249-250
  - relation of, to meanings, 310
  - situations demanding, 244-245
  - utilization of memory aids in, 251

- Education,
  - aims of,
    - American Youth Commission on, 43
    - Education Policies Commission on, 44
    - North Central Association of Colleges and Secondary Schools on, 43
    - Herbert Spencer on, 44
  - function of, in pupil adjustment, 100
  - meaning of, 39, 44
  - objectives of, 42-43
  - principal purpose of, 14-15
    - community-centered, 335-358
    - objectives of, 43-44
    - trends in enrollment, 29
  - social sensitivity, as objective of, 373
- Education association,
  - local, 557-558
  - objectives of state, 555
- Effect, principle of, 60-61
- English,
  - community resources in, 375
  - drill in, 247
  - guidance in, 483
  - projects in, 214
  - use of radio in, 337, 344-345
- Equipment,
  - motion picture, 318-319
  - radio, 337, 339
  - slide projectors, 320-321
  - sound-recording, 347
- Ethics,
  - code of, 587
  - fulfilling contracts, 532
  - teachers' professional, 586-587
- Evaluation,
  - in lecturing, 241
  - of outcomes of instruction, 290
  - of pupil growth, 13
  - of pupil-teacher planning, 125
  - of radio programs, 344-345
  - purposes of, 411
- Examinations (See "Tests")
- Excursions,
  - community, by teachers, 550
  - school,
    - planning for, 363-364
    - techniques of, 364-365
    - values of, 362-363
- Executing, a phase of project teaching, 211-212
- Experience, pupil,
  - as unifying element, 217

Experience, pupil—*Continued*
  factors in intensity of, 86
  interpretation of, 54-55
  provisions for educative, 41
  significance of camp experience, 366
  units, 202
Experimentation,
  characteristics of sound experimentation in learning, 515-517
  in evaluating teaching techniques, 9
Explaining (See "Lecturing")
Exploration step, in Morrison plan, 205
Extra-class activities,
  conducting, 490-491
  contributions of,
    to ideals and attitudes, 93
    to objectives of secondary education, 487-489
    Douglass, H. R., on, 487-488
  planning and supervision of, 489-490

Facsimile, use of, 350
Failure, school, effects on learning, 107
Field trip (See "Excursions, school")
Film strips, use of, 320
Follow-up work,
  in lecturing, 241-242
  in use of phonograph records, 341
  on camp activities, 367
  on radio broadcasts, 344
Foreign language,
  community resources, 377
  drill in, 246
  guidance in, 484
  projects in, 215-216
Frequency modulation in education, 349-350
Frequency, principle of, 58-59

Gangs, influence of, on adolescent behavior, 105
Generalization,
  as step in inductive problem-solving, 274-275
  measurement of, 447
Gestalt psychology in unit teaching, 201
Goals, importance of, to motivation, 77
Grade placement of curricular materials, 288-289
Grades (See "Marks, school")
Group influence on adolescent behavior, 110-112
Growth, pupil,
  by acquiring knowledge, 81
  determined by methods, 56
  environmental components, 51
  evaluation of, 13
  individual matter, 53
  in social responsibility, 100
  period of, 39
  provisions for, 41
  relation of, to environment, 38, 40
Growth, pupil—*Continued*
  responsibility of teacher for, 54-55
  result of heredity, 39
  types of educational, 45-46, 80
Guidance,
  areas of, 469-470
  basic assumptions in, 470-471
  choice of subjects, 477
  data needed in, 479-481
  educational, 474-475
  in core curriculum, 482
  in home room, 492
  in leisure-time activities, 478-479
  in various subjects, 482-486
  misbehavior and, 472-473
  orientation programs, 475-477
  preparation of teacher for, 467-469
  principles of, 473-474
  readings on collection and interpretation of pupil data, 480-481
  responsibility of teacher for, 466-467, 481-482
  vocational choices, 477-478

Habits,
  acquisition of, 89
  desirable study, 163
  diagnosis of study habits, 159-163
  establishment of effective study habits, 163-165
  nature of, 88
  of correct behavior, 100
  permanence of, 89-90
Heredity, a factor in growth, 40-41
Home,
  changes in, 32-33, 35
  environment, 32, 480
  relation of, to school discipline, 108-109
Home economics,
  community resources in, 376-377
  guidance in, 485
  projects in, 215
Home rooms,
  administrative function, 492
  as agency of guidance, 492
  functions in extra-curricular activities, 493
  management of, 494-495
Home study, inadequacy of, 143-144
Honor system,
  essential conditions for, 114
  in study halls, 520

Ideals,
  development of, 91-92
  meaning and importance of, 91
Illustrations,
  in textbooks, 323
  provisions for, 133
  verbal, 237-239
Incentives,
  criteria for judging, 70

- Incentives—*Continued*
  - incentive-type film, 315
  - knowledge of failure, 61, 78
  - knowledge of goals and achievement, 77
  - marks as, 411-412, 415
  - measurement as, 411
  - types, 77
  - values, 77
- Individual differences,
  - ability grouping, 396-397
  - adapting course of study to, 395-407
  - adjustment for bright and dull learners, 391-395
  - devices and procedures employed in relation to, 381-382
  - diagnostic procedures for determining, 407
  - differentiated assignments, 398-401
  - flexible assignments, 401-403
  - grouping by sex, 406-407
  - individual instruction, 404-406
  - nature of variation, 382-385
  - provisions for,
    - in supervised study, 397-398
    - in unit teaching, 207-208
  - the project method, 403-404
- Inductive method (See "Problem-solving")
- Industrial arts,
  - drill in, 247-248
  - guidance in, 485
- Instruction,
  - economy of time in, 309
  - function of, 49
  - individual, H. R. Douglass on, 404-405
  - present-day, 35
  - relation of, to growth, 38
  - selection of materials of, 291
  - supplementary character of, 51-52
- In-service education,
  - college work as means of, 566-567
  - committee work as means of, 551-553
  - general and professional reading as means of, 558-565
  - membership in professional organizations as means of, 553, 558
  - need for, 541-544
  - professional reading as means of, 564-565
  - travel as means of, 565-566
  - workshops in, 547-548
- Interest, principle of (See "Attention")
- Interests,
  - and industry, 384
  - as point of departure in teaching, 133
  - development of, 95-96
  - identifying, 386-389
  - individual, 74
  - information concerning, 386-389
  - in reading, 167-168
  - radio in development of, 336
- Interests—*Continued*
  - sources of, 73-74
  - types of, 72-73
- Interviews, with local citizens, 365-366

- Judging, a phase of project teaching, 212

- Laboratory activities,
  - community as educational laboratory, 355-358
  - directing learning in, 498-500
  - integration of, with courses, 497-498
  - purposes of, 496
  - *v.* demonstration, 497
- Learners,
  - bright,
    - characteristics of, 391
    - importance of, 391
    - teaching, 391-392
  - dull,
    - characteristics of, 392-393
    - provisions for, 395
    - teaching, 393-394
- Learning,
  - and intelligence, 69
  - as changes in individual, 42
  - concomitant learnings, 4, 50, 96-97
  - directing, in laboratory, 498-500
  - effect of satisfaction or annoyance on, 60
  - emotional blocks to, 107-108
  - incentives to, 70-72
  - knowledge of success and, 61
  - laws of, 58
  - physiological factors in, 68
  - principles of, 58-68
  - principles underlying teaching procedures, 199
  - psychological bottlenecks in, 307
  - purposeful, Kilpatrick on, 210
  - rational behavior, 99-100
  - self-activity in, 100
- Learning cycle, 205
- Lecturing,
  - advantages of, 230
  - follow-up on, 241-242
  - illustrative materials in, 236-237
  - judicious use of, 232-233
  - limitations of, 231
  - need for, 228-229
  - note-taking in, 239-240
  - opportunities for, 229
  - preparation for, 233-234
  - preparation of the learner for, 239
  - supplementary materials in, 229
  - technique of, 234-236
  - verbal illustration in, 237-238
- Library, school,
  - students' use of, 170
  - teaching use of, 170-175

- Management,
  - first day, 507-509

Management—*Continued*
  home room, 494-495
  in socialized recitation, 185-187, 189-191, 193-197
  of classroom activities, 584
  of extra-class activities, 490-491
  of laboratory, 499-500
  of large classes, 501-502
  study hall, 519-520
Maps,
  developments in making, 325
  function of, 325
  types of, 325-326
  use of, in teaching, 326-327
Marks, school,
  based upon normal curve, 457-460
  literal system, 457
  necessity for accuracy, 414-415
  reports of, 460-464
  values of, 415
Mathematics,
  community resources in, 377-378
  drill in, 246
  guidance in, 484
  projects in, 216-217
Measurement of understanding, 437-452 (See also "Outcomes of instruction")
Meetings, teachers', 545
Memorizing,
  devices in, 251
  suggestions for memory drill, 250
  verbatim, 81
Mental health of teachers,
  avocational interests and, 578-579
  Burnham, W. H., on, 12
  meaning of, 575
  program for maintenance of, 576-581
  significance of, 575-576
Mental maturity, in pupil adjustment, 108
Methods, teaching,
  developmental,
    advantages of, 83-84
    v. authoritative, 82
  new, 141
  principles of learning underlying, 190
  significance of, 56
  Socratic, 265-266
  types of, 82-85
Mind set,
  examples of, 64-65
  meaning of, 64
  procedures based upon, 66
Models in teaching, 327-328
Morrison plan,
  in practice, 207-208
  phases of, 205-207
  psychology underlying, 202, 205
Motion pictures,
  criteria for judging, 320
  developing appreciation of, 319-320
  effectiveness of, 307
Motion pictures—*Continued*
  equipment, 318-319
  procedure for use of, 318
  selecting, 317-318
  teaching films, 313-314
Motivation,
  devices for motivation in drill, 250
  Hall, G. S., on, 71
  importance of immediate goals, 77
  Mann, H., on, 71
  place of compulsion, 77-78
  project as means of, 209
  radio as aid in, 335-336
  relation of, to needs, 74
  value of, in problems, 258-260
Music,
  community resources in, 378
  daily lesson plan in, 135-137
  guidance in, 484
  projects in, 216
  use of radio in, 337

National Catholic Education Association, 554
National Education Association,
  departments of, 553
  official code of ethics of, 587
  on academic freedom, 554
  on provisions for slow learning pupils, 595
  teacher's responsibility for membership in, 558
  Victory Action Program of, 553-554
Needs, pupil,
  felt needs, 74-75
  generic and specific needs, 74-75
  immediate *vs.* deferred, 75-76
  relation of, to motivation, 74, 76
Norms, test,
  characteristics of, 424
  value of, 424
Note-taking, 239-241

Objectives,
  formulation of course objectives, 286-287
  of education, 42-44
  of secondary education, H. R. Douglass on, 43
  relative significance of units in achieving, 289-290
  validity of, 287
Observation and visitation, planned, 551
Observational techniques, in evaluating pupil growth, 419-420
Occupations course, guidance in, 485-486
Oral presentation (See "Lecturing")
Organization step, in Morrison plan, 206
Organizations,
  for teachers in special fields, 555-556
  teachers' professional, 553-558
Orientation,
  of new teachers, 550

Orientation—*Continued*
  of pupils, 475-477
  programs, Douglass, H. R., on, 476
  to community resources, 373-374
Outcomes, learning,
  attitudes and ideals, 90-91
  concomitant, 50, 96-97
  effect of lecturing upon, 230
  habits and skills, 88
  knowledge, 81
  of extra-curricular activities, 487-488
  rational behavior, 99
  role of questioning in achieving, 260-261
  tastes and ideals, 90-91
  types, 45-46
  understanding, 86
Outcomes of instruction, measurement of,
  ability to use principles, 428-429
  ability to use sources of information, 438-439
  concepts, 438
  generalizations, 447
  interpretation of data, 446-447
  interpretation of relationships, 444
  method understandings, 441
  perception, 448-449
  reasoning (cause-effect relationships), 445-446
  recognition of logical implications, 445
  social attitudes, 439-440
Outlining of reading materials, 177-178

Pamphlets, as collateral reading materials, 302
Panel discussions, 191-193
Personality,
  pupil
    development of sound, 12
    importance of personal achievement to, 24
    inventories of, 389
    resolution of life complexes, 27-28
  teacher, 570
Philosophy, educational,
  in course of study construction, 287
  of school camp, 367-368
  underlying units of learning, 202
Phonograph records, in teaching, 340-341
Physical education,
  community resources in, 378-379
  drill in, 248
  guidance in, 485
Physical health,
  factor in pupil adjustment, 106
  related to teacher's mental health, 577-578
Pictures, flat
  selection of, 322
  sources of, 321
  uses in teaching, 322
  value of, 321
Placement of teachers,
  agencies for, 523-524, 527
  criteria for evaluating, 523
  getting better positions, 527
  locating positions, 528-529
  personal interviews for, 526-527
  references for, 528
  written applications for, 524-525
Planning, a phase of project teaching, 211
Planning instruction,
  camp experiences, 366-367
  daily recitation, 128-137
  directed study, 129
  extra-curricular activities, 489-490
  formulation of aims, 130-132
  importance of, 119
  pupil participation in, 124-125
  pupil-teacher, 129, 147
  reasons for, 120-121
  resource units, 122-124
  scope of, 122
  selection and organization of content, 132
  teaching procedures, 133
  units, 127-128, 224
Plans, teaching,
  characteristics of daily, 130
  for year, 126
  form of, 134
  illustrative plan, 135-137
  use of, 138
  weekly, 128
Population, high school,
  changes in, 28-34
  trends in enrollment, 29
  variation in, 382-385
Preparatory activities, in teaching a unit, 217-220
Presentation step, in Morrison plan, 206
Principles of teaching, utilized in community-centered education, 355-356
Problem method of teaching,
  as guide to thinking, 269-270
  types of, 271-272
  unit problems, 270
  use of, 270-271
  value in motivation, 269
Problem-solving,
  nature of problem, 269
  steps in deductive, 271-274
  steps in inductive, 274-276
  summary of procedures, 276-277
Procedures, teaching (See "Methods, teaching")
Professional growth (See "In-service education")
Professional problems of the teacher, 522-540
Professional writing, as means of professional growth, 564-565

Project,
  appraisal of project method, 212-213
  characteristics of, 209
  criteria for selection of, 210-211
  Douglass, H. R., on, 209
  essence of, 208-209
  executing, 211-212
  in high school subjects, 214-216
  judging, 212
  Kilpatrick on, 208-209
  limitations of, 213-214
  original meaning of, 208
  planning, 211
  provisions for individual differences in, 403-404
  selection of, 210
Public address system,
  educative values of, 333-334
  student broadcasts on, 334-335
Punishment,
  related to pupil adjustment, 114-117
  corporal, passing of, 5, 36
Pupil participation,
  in extra-curricular activities, 489
  in school camp activities, 306-307
  in school government, 112-114
  in socialized recitation, 187-188
  in study hall supervision, 520
Pupil-teacher planning,
  advantages of, 125
  importance of, 124-125
  in project method, 210-212
  in unit teaching, 224-226
  weakness in, 125
Pupils, high school,
  changes affecting, 30-31, 34-37
  characteristics of, 21-23
  characteristics of bright, 391
  characteristics of dull, 392-393
  conditions influencing behavior of, 104-112
  future needs of, 384
  general learning ability of, 382
  opinions of, concerning teachers, 570-571
  physical health of, 108
  taboos of, 27
  the "other half," 29, 32-33
  values peculiar to, 23-24
Purposing, a phase of project teaching, 210-211

Questioning,
  handling pupils' answers, 266-267
  Socratic procedures, 265-266
  specific techniques, 264
  stimulating pupils' questions, 267
Questions,
  characteristics of effective, 263-264
  integration of, 265
  purposes of, 259-260
  types of, 261-263

Radio in education,
  activities during broadcast, 344
  evaluation of, 345
  guidance of students in, 347
  influence of, 348
  listening habits of pupils, 347-348
  out-of-school broadcasts, 343-344
  post-broadcast activities, 344
  programs available, 342-349
  pupil preparation for the broadcast, 343
  selection of program, 341-343
  student evaluation of, 345-346
  student participation in broadcasts, 346
Rating devices,
  as measure of growth, 419
  self-rating, 572-574
Readiness,
  importance of, 67
  nature of, 66
Reading, pupil,
  comprehension, 167
  deficiencies in, W. S. Gray on, 141-142
  development of interest in, 167-168
  library materials, 170-173
  outlining materials, 177-178
  rate in, 166-167
  summaries of, 178
  teaching use of reading materials, 165
  training how to read, 168-170
Reading, teacher,
  elements in program of professional reading, 563
  professional magazines, 564
  program of, 561-562
  value, 558-559
Realia (See "Visual aids")
Realism, in education, 9
Recency, principle of, 58-59
Recitation,
  in Morrison plan, 237
  limitations of traditional, 181-182
  teaching films in, 318
Recitation, socialized,
  dangers to be avoided in, 193-197
  development of, 183
  discipline in, 187
  discipline problems in, 197
  formal type of, 185-187
  forms of, 183-184
  informal type of, 189-191
  irrelevant discussion in, 195
  leadership in, 188-189
  nominal, 196-197
  panel discussion, 191-193
  socialized review, 256-257
  teacher-pupil conferences, 188
  town hall discussion (See "Panel discussion")
  values of, 184-185
Records, anecdotal, 419-420

Recreational activities,
  in school camps, 367
  participation in, 26-27
  radio listening, 347-348
  related to discipline problems, 109-110
Remedial procedures, 407
Reports, oral, W. T. Gruhn on, 175-176
Reports to parents,
  newer trends, 461-464
  report cards, 460-461
Research,
  change in attitude toward, 514-515
  characteristics of experimental, 515-517
  co-operative, 517
  publication of, 512-514
  utilization by teachers, 13
Responsibilities of students, managerial, H. R. Douglass on, 113
Retention,
  factors in, 86
  teaching for, 85-86
  value of visual aids in, 308-309
Review procedure,
  characteristics of, 257
  occasions for, 254-255
  of previous lesson, 257-258
  place of, 253-254
  purposes of, 254
  socialized review, 256-257
  technique of, 255-256

Satisfaction, in learning, 60
Scale, self-rating, for teachers, 572-574
Scales (See "Tests")
Science,
  community resources in, 375-376, 379
  criteria for textbooks in, 297
  drill in, 246-247
  guidance in, 483
  projects in, 214
Score cards, in measurement of growth, 418
Self-analysis, in mental health, 579
Sense of humor, importance of, in mental health, 578
Skills,
  acquisition of, 89
  as outcomes of learning, 88-89
  drill for development of, 252-253
  nature of, 88
Slides, use of, 320-321
Social studies,
  community resources in, 379
  guidance in, 483-484
  measurement in, 437
  projects in, 215
  teaching unit in, 219-220, 224-226
  use of radio in, 337
Specimens, as visual aids, 327-328
Stereograph, as visual aid, 324
Studio learning (See "Laboratory activities")
Study clinics, as means of in-service education, 549
Study, directed,
  activities involved in, 139-140
  combined work-study plan, 147-148
  divided period, 146-147
  essentials of, 148
  essential study materials in, 149
  initiating the study process (See "Assignment")
  meaning of, 139
  need for, 140-144
  objections to, 145-146
  provision for individual differences in, 397-398
  study environment, 148-149
  teacher's role in, 155-156
Study groups, in in-service education, 546-547
Study habits,
  abilities in study, 162-163
  comprehension in reading, 167
  desirable study habits, 133, 163
  developing and guiding reading interest, 167-168
  diagnosis of, 159-162
  "how-to-study" courses, 163-164
  importance of, 158-159
  importance of library skills in, 170-174
  improvement of, 164-165
  inventories of, 407
  oral reports, 175-176
  outlining reading materials, 177-178
  rate of reading, 166
  school librarian's responsibility for, 168, 171
  teaching how to read in different subjects, 168-170
  teaching how to use the dictionary, 173-174
  teaching use of card catalog, 173
  tests of library skills, 172
  using textbooks effectively, 165-166
  writing summaries, 178
  written reports, 176-177
Study halls, equipment in, 518
  inadequacy of, 144
  management of, 519-520
  purposes of, 518-519
  size and location of, 518
  student supervised, 520
Summaries, writing, 178
Supervised study (See "Study, directed")
Supplementary reading materials (See "Collateral readings")
Survey, community,
  techniques of, 360-362
  types of, 359-360

Tastes,
  development of, 94
  Douglass, H. R., on, 95-96

Teachers,
  and community standards, 510-511
  and guidance, 466-467
  and home room, 491-495
  and public information, 511-512
  and research, 512-517
  ascertaining nature of duties of, 504-505
  as club sponsors, 491
  as counselors, 11-12
  as directors of learning, 140, 155-156
  bill of rights for, 588
  contracts for, 530-531, 532
  devotion of, to democratic procedures, 583
  education of, 543
  establishment in community, 509-510
  faith of, in education, 582-583
  investments of, 538-539
  learning by, about the community, 505-506, 509
  managerial abilities of, 583-584
  membership of, in professional organizations, 553-558
  mental health of, 572-581
  obtaining information about the school by, 505
  personal traits of, 569-570
  prayer of, 19
  preparation by for first day, 507-509
  professional ethics of, 586-587
  professional problems of, 522-540
  pupils' opinions of, 571
  purchases by, 539-540
  qualities of, 568
  retirement of, 537-538
  role of, 5
  savings of, 537
  self-rating scale for, 572-574
  task of, 18
  tenure of, 529-530
  traditional role of, 3-4
  understanding of children by, 581-582
  understanding of the times by, 582
Teaching,
  authoritative, 82-83
  concomitant outcomes of, 96-97
  direct and indirect methods of, 84-85
  discipline as a measure of success in, 103-104
  for democracy, 14
  for economic democracy, 15-16
  for intellectual emancipation, 17
  for understanding, 86-87
  for world peace, 16
  in nineteenth century, 7
  large classes, 500-501
  placement in, 527-529
  principles of, in community-centered education, 355-356
  recent developments in, 7-10
  small classes, 502
Techniques,
  in arranging visual aids, 306-307
  in questioning, 264-265
  of school excursions, 364-365
Television, use of, in education, 350-351
Telling (See "Lecturing")
Tenure, teacher,
  continuing contracts, 530-531
  effects of insecurity, 530
  permanent, 529
Tests,
  administration of,
    economy of time, 453
    selection of tests, 429
    suggestions for giving, 452-453
  characteristics of,
    objectivity, 423
    reliability, 422
    validity, 421
  construction of,
    completion, 433
    essay items, 434
    objective tests, 431-432
    true-false, 432-433
    weighting questions, 455
  types of,
    completion, 426-427
    diagnostic, 419
    enumeration type, 425-426
    essay type, 430-431
    matching, 429-430
    multiple choice, 428-429
    oral, 416-417
    purposes, 420-421
    relative reliability of, 429-430
    true-false, 427-428
    written tests, 416-417
Test scores,
  interpretation of, 453-455
  scoring essay type, 455
  scoring objective, 453-455
Textbooks,
  criteria for evaluating, 297-298
  dependence upon, 291-293
  illustrations in, 323
  improvement in, 298
  selection of, 295-296
  using, 294
  values of, 293-294
Thinking, problem as origin of, 260
Tradition, educational,
  aspects of, 7
  in instruction, 3-6
  old order in teaching, 3-4
  role of teacher, 4-5
Transfer of training, nature of, 69-70

Understanding, pupil,
  development of, 87
  importance of, 86-87
  measurement of, 436-452
Unions, teachers',
  journals of, 556

Unions, teachers'—*Continued*
  membership of, 556
  objectives of, 556-557
Unit of instruction,
  activities of pupils and teachers in, 224-226
  anticipating outcomes of, 219-220
  approaches to, 222
  assignment of, 223
  characteristics of, 202-203, 218
  concepts of, 201-202
  creating interest in, 221
  culminating activities in, 226-227, 346
  emergence of concept of, 199-201
  initiatory activities in teaching, 220-224
  learning and teaching units, W. D. Grinstead on, 202
  meaning of, 202
  Morrison plan, 204-207
  planning in, 224
  resource unit (Denver public schools), 122-124
  selection of, 217-218
  size of, 203
  teaching, 123-124, 217-227
  types of, 202-203
  unity of, human personality, 200-201
Use, principle of, (See "Activity")

Values, educational,
  criterion of, 41-42
  of socialized procedures, 184-185
Verbalism,
  meaning of, 305
  results of, 309-311
  revolt from, 8
Verbatim learning, 81
Vicarious experience,
  advantages and disadvantages of, 84-85
  meaning of, 84
Visual aids,
  cartoons and posters, 324-325
Visual aids—*Continued*
  comparative effectiveness of, D. J. Goodman on, 308
  film strips, 320
  flat pictures, 321-322
  general types of, 306-307
  maps, 325-326
  models, 327
  objections to use of, 311-312
  opaque projections, 320-321
  pictorial pamphlets, 323
  postage stamp collection, 323
  procedure for teaching with, 318
  selecting films, 315-316
  slides, 320-321
  sources of, 329-330
  specimens, 327-328
  stereograph, 324
  supplementary character of, 311
  textbook illustrations, 323
  types of films, 314-315
  use of films, 316-318
  values of, 307-309
  verbalism and, 305, 309-311
Vocational experiences,
  anxieties of youth, 24-25
  work experience, 371-373

Winnetka plan, 404
Workbooks,
  criteria for selecting, 301-302
  use of, 299
  values of, 299-300
  weaknesses of, 300
Work experience,
  Douglass, H. R., on, 370-371
  opportunities for, 371-372
  organization of, 372-373
  values of, 369-371
Workshops, teachers',
  agencies conducting, 547
  organization of, 547-548
  procedures in, 548-549
Written reports, 176-177